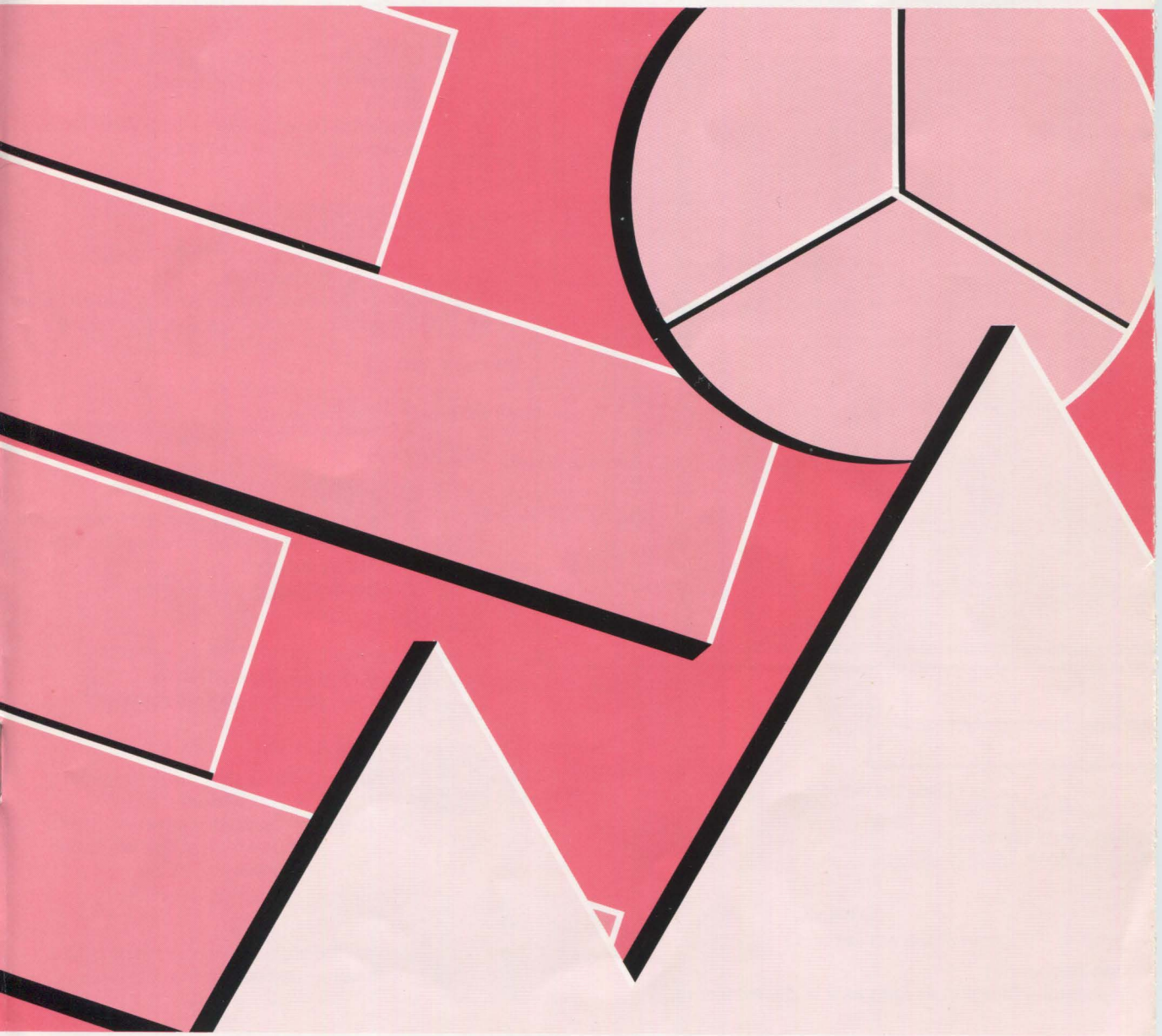
OPERATING MANUAL

Colour PenGraph EB50

SILVER REED



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QUICK REFERENCE FOR PARTS/FUNCTIONS

The numbers in red box indicate the page No

COLOUR

COLOUR 21
Changes ballpoint pen colours.

PRINT

PRINT 12
Sets printing modes.

LINE

LINE 19
Sets line space modes.

P.STYLE

PRINT STYLE 19
Sets print style modes.

SIZE

SIZE 20
Sets size modes of characters/graphs.

<A>

DIRECTION 20
Sets printing direction modes.

MODE SHIFT KEYS

25 26

GRAPH SELECT KEYS

MARREL

MARGIN RELEASE 15
Clears margin sets for additional typing or margin resetting.

L MAR R MAR

LEFT MARGIN (RIGHT MARGIN) 22
Sets the left margin and right margin with CODE key.

TAB

TAB 23
Moves the carrier to the tab stops and clears all tabs with CODE key.

Display Control Dial 9

TAB+ TAB−

TAB SET (TAB CLEAR) 23
Sets the tabs and clears tabs with CODE key.

CODE

CODE
Used in combination with other keys to perform special functions.

LOCK

SHIFT LOCK 9
Locks the shift key for continuous uppercase typing.

SHIFT

SHIFT 9
Used to type capitals and characters/symbols shown on the upper part of the key top. Also releases shift lock.

On the Keyboards other than the above 301, function keys are shown with arrow marks.

Top Cove

Paper Guide Indicator 8

Carrier Cover 5

Card Holder 15

Drum

Pen Ejector

Carrier

COLOUR PRINT LINE P.STYLE SIZE <A>

NORMAL PRINTER

Function Switch 3

MARREL ! 1 @ 2 # 3 $ 4

L MAR R MAR TAB Q W E R

TAB+ TAB− LOCK A S D F

CODE SHIFT Z X C

GRAPH RPT

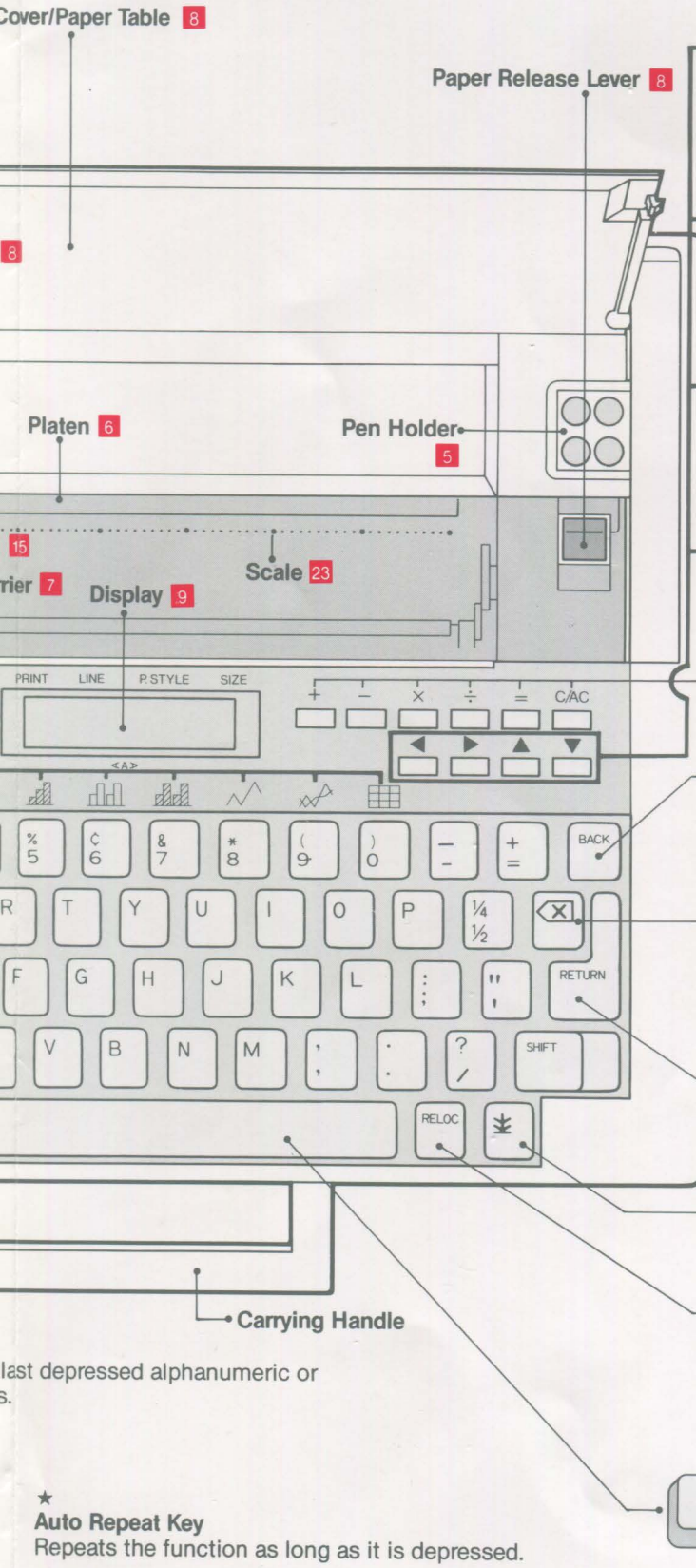
®

RPT

REPEAT
Repeats the las function keys.

GRAPH

GRAPH 24
Controls the graph mode ON or OFF.



BACKWARD 17
(On paper): Moves the carrier a half space (in M size) to the left.
(On display): Moves the character one space to the left.

FORWARD 17
(On paper): Moves the carrier a half space (in M size) to the right.
(On display): Moves the character one space to the right.

★
REVERSE INDEX 8
Feeds the paper in the reverse direction by 2mm (0.08 in.) increments.

AC Adaptor Jack 4

★
INDEX 8
Feeds the paper in the forward direction by 2mm (0.08 in.) increments.

ON/OFF Switch 4

CALCULATION KEYS 42

★
BACKSPACE 14 17
Moves the carrier or the displayed character one space to the left.

Interface Jack 45

DELETE 14 17
Deletes characters on the display or on paper.

★
RETURN 16
Returns the carrier to the left margin with the required line spaces and commences printing out.
Also, enters the graphic data.

AUTO PAPER INJECTOR 8
Injects a sheet of paper automatically.

RELOCATE 14 17
(On paper): Moves the carrier to the last typed position.
(On display): Positions the last entry prior to correction at the left of the cursor.

★
SPACE 14
Moves the carrier one space to the right or inserts a space into the display.

last depressed alphanumeric or
s.

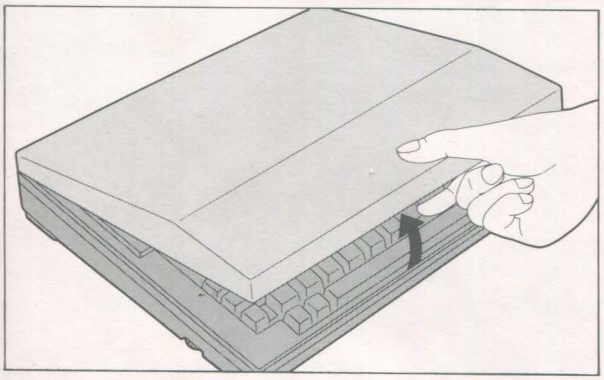
★
Auto Repeat Key
Repeats the function as long as it is depressed.

INTRODUCTION

Congratulations on your purchase of our Colour PenGraph.
This machine, driven by batteries or AC Adaptor, uses ballpoint pens for printing, prints in 4 colours and automatically draws 11 types of graphs and a table in 3 different sizes. A Calculator is included in this machine. Thanks to the interface, the graphic capability of this machine is greatly expanded.

This Operating Manual outlines the basic operations of the Colour PenGraph.
Follow the operations in this manual while checking the position of parts/functions on the fold-out diagram.

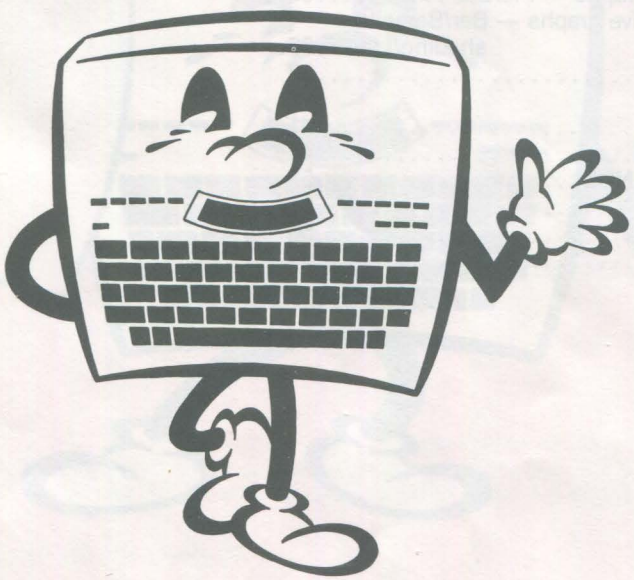
Your careful reading of this manual will maximize your effective use of the Colour PenGraph.



The following accessories are packed together with this machine.

a. 4 Ballpoint Pens (2 sets)
b. AC Adaptor (option)
c. Hard Case
d. Operating Manual

In this Operating Manual, carrier position is indicated by a symbol (-◉-).



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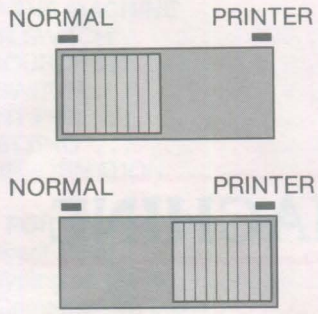
FUNCTION SWITCH



This is for normal typewriter mode. In this mode, it is possible to type characters or draw graphs in the course of your entering information.

Detailed explanations are included in pages 10 ~ 43.

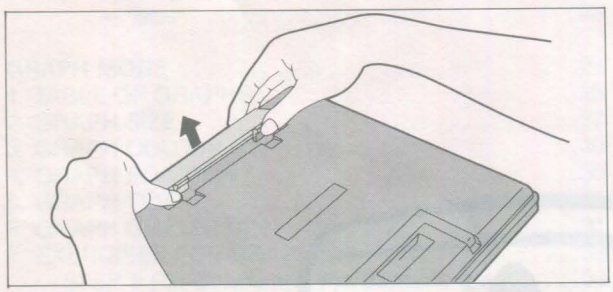
This is for printer mode.
In this mode, the PenGraph can be connected with a computer. The keyboard is locked in the printer mode.

Detailed explanations are included in pages 44 ~ 56.

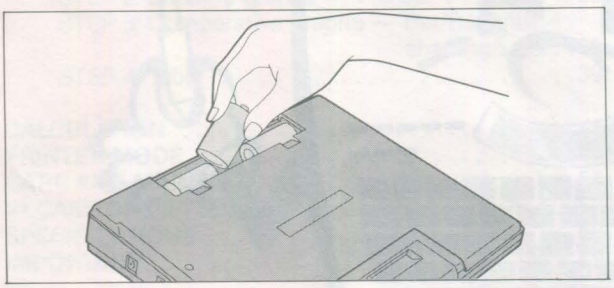
POWER SOURCE

Batteries

This machine runs on battery power to give it true portability. Install five new "D" cell batteries (LR20/R20/SUM1) as follows.



1. Press the latches of the battery compartment lid on the bottom cover, as illustrated, and remove the lid.



2. Install five batteries with correct polarity as indicated.

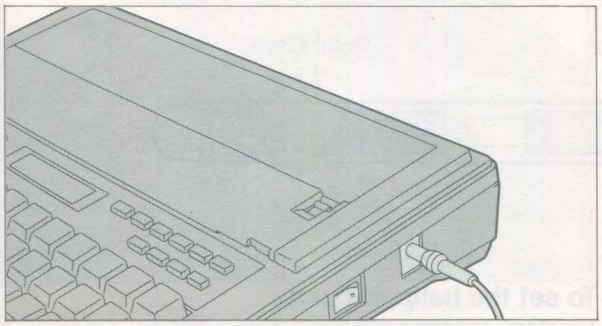
3. Replace the lid.

- *Replace all five batteries at the same time.*
- *Remove the batteries if the machine is not going to be used for a long period of time.*
- *Replace the batteries with new ones of the same kind.*

Battery Status Display

If the batteries are exhausted while in operation, the Battery Status Display appears after depressing RETURN.

AC Adaptor (option)

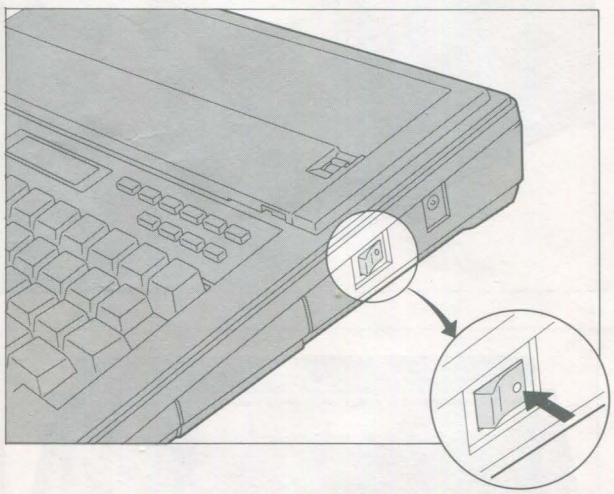


Before you start to use the machine, check the back plate on the back side of the adaptor to see whether the voltage shown accords with the power supply.

1. Turn the ON/OFF switch off.
2. Connect the AC Adaptor cord to the jack to the right side of the machine and then to a power outlet.

- *The installed batteries will be automatically disconnected when the AC Adaptor is connected.*
- *Unplug the AC Adaptor if it is not in use for a long time.*
- *Use the designated AC Adaptor only.*

ON/OFF SWITCH



When the power is turned on, the carrier will return to the left final position for initial movement.

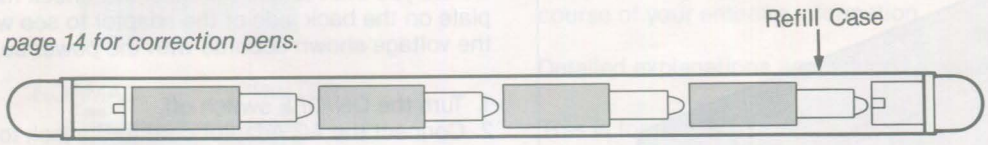
(See page 7.)

- *If you wisn to turn on the ON/OFF switch again, immediately after switching it off, be sure to wait at least 2 seconds.*

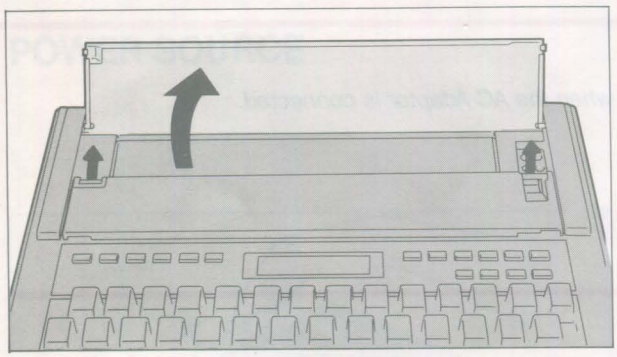
BALLPOINT PEN

This machine is equipped with 2 sets of 4 ballpoint pens, located at the back of the hard case.
All ballpoint pens are capped with respective colours.

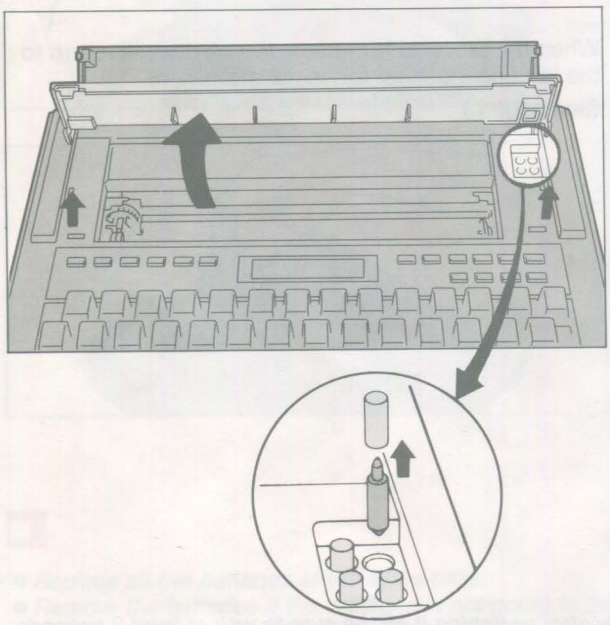
● *Refer to page 14 for correction pens.*



To set the ballpoint pen



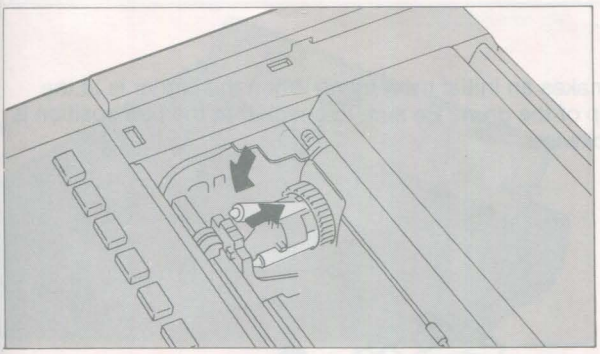
1. Open the top cover.



2. Remove the carrier cover.

3. Remove 4 ballpoint pens from a refillcase.
   Pen holder is ready to hold ballpoint pens.

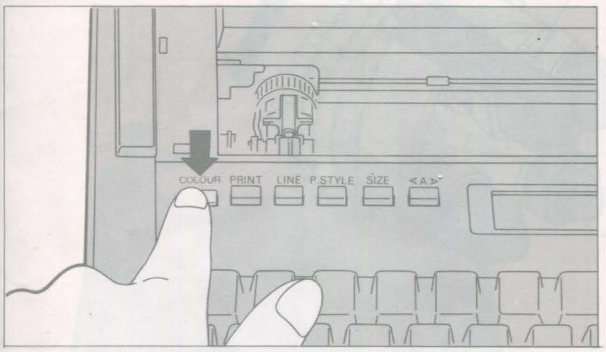
   Take off the caps of ballpoint pens for setting.



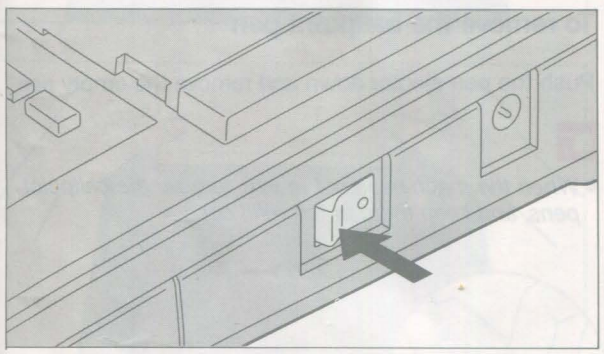
4. Set the ballpoint pen according to the colour indicator on the drum as follows.

   White line : Black pen
   Red line : Red pen
   Blue line : Blue pen
   Green line : Green pen

- Insert the ballpoint pen with the penpoint facing towards the platen as illustrated.

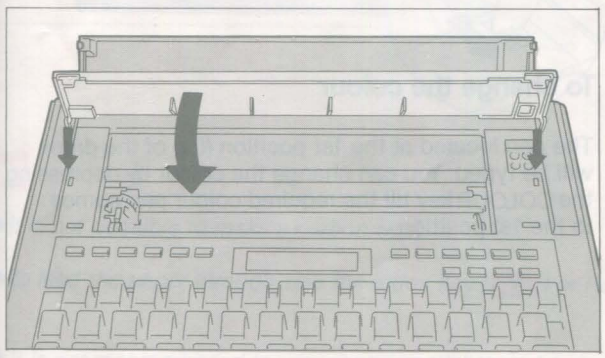


5. Rotate the carrier to the pen position by depressing the COLOUR key, and set all ballpoint pens respectively.



6. After setting all ballpoint pens, turn off the switch and then turn it on again, waiting at least 2 seconds.

   The carrier will make an initial movement.
   (See IMPORTANT on page 7)

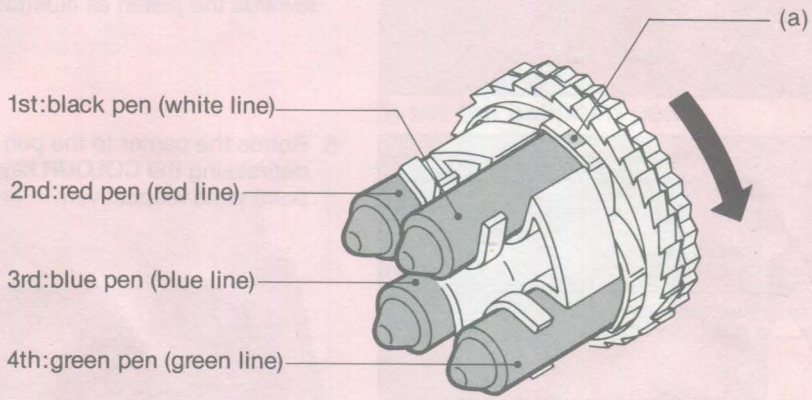


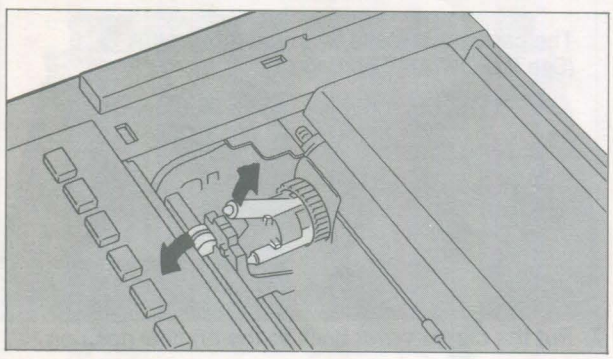
7. Put the carrier cover back to the original position.

IMPORTANT!

As soon as the ON/OFF switch is turned on, the carrier makes an initial movement. When the carrier is at the INITIAL POSITION, you can see a white line (a) on the top of the drum. Be sure to check that the pen position is set as in the following illustration. The carrier rotates clockwise.

INITIAL POSITION





To remove the ballpoint pen

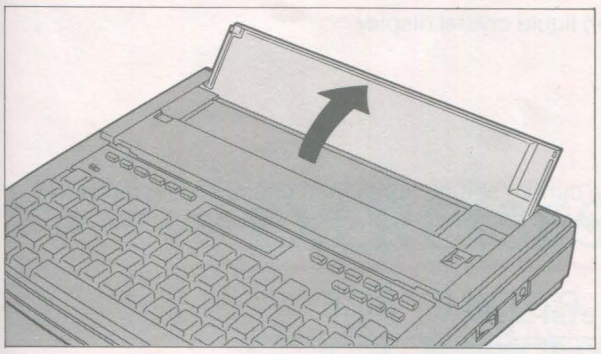
Push the pen ejector down and remove the empty pen.

- *When the machine is not in use, remove the ballpoint pens, and keep them in the refill case.*

To change the colour

The pen located at the 1st position (top of the drum) will be typed. You can change the colour by depressing the COLOUR key till the required colour pen comes to the 1st position.

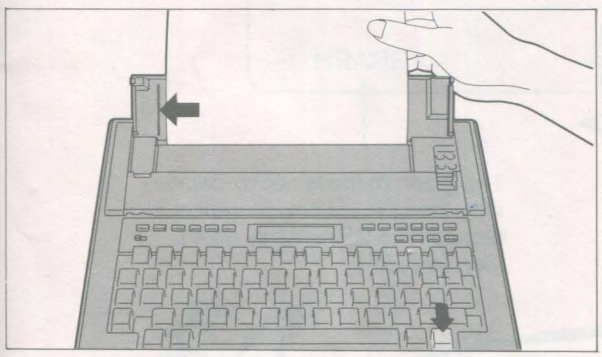
PAPER SETTING



Top cover

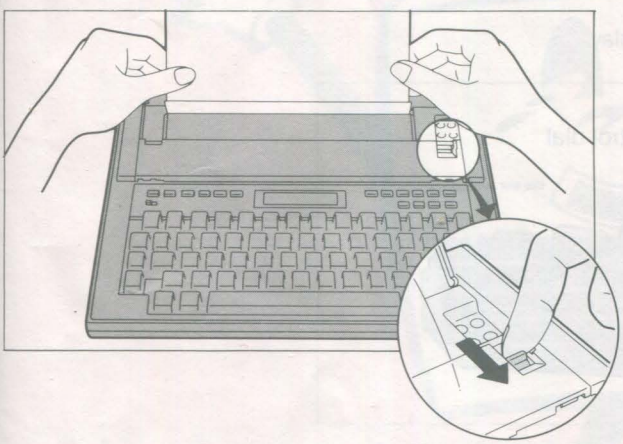
Open the top cover when using this machine. It will act as a paper table.

To set the paper



1. Align the left edge of the paper with the paper guide indicator on the paper table. Inject the paper straight onto the platen until it stops.

2. Depress the Auto Paper Injector. The carrier moves to the center and the paper is injected automatically.



3. Pull the paper release lever towards you if you need to adjust the paper. Then push it back to the original position.

- *It is not possible to make a carbon copy.*
- *To feed the paper through, use the Index Key (▼) or Reverse Index Key (▲). Do not pull the paper out by hand.*
- *It is not recommended to use paper smaller than A4 size — 210mm (W)× 297mm (L) — (8.6 in.× 12.1 in.). It will not be possible to set the paper correctly.*
- *It is not recommended to use* ***roll-paper.*** *Use only* ***cut-sheets.***

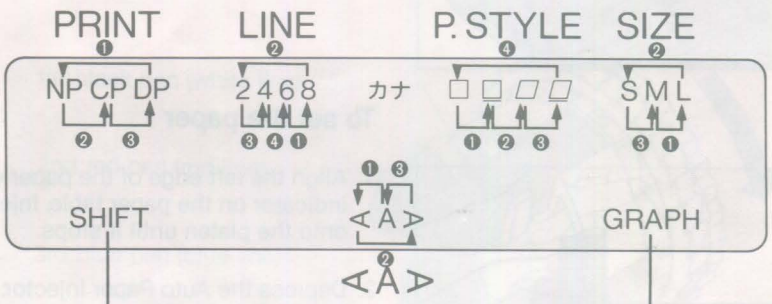
DISPLAY INFORMATION

This machine features a 1-line, 16-character (including cursor) liquid crystal display.

Mode setting

The display informs the operator of the current settings.

The settings of the last mode set appear on the display. The current setting lights from one operating mode to another in a rotational manner as illustrated below, by successive depressions of PRINT, LINE, P.STYLE, SIZE, <A>.

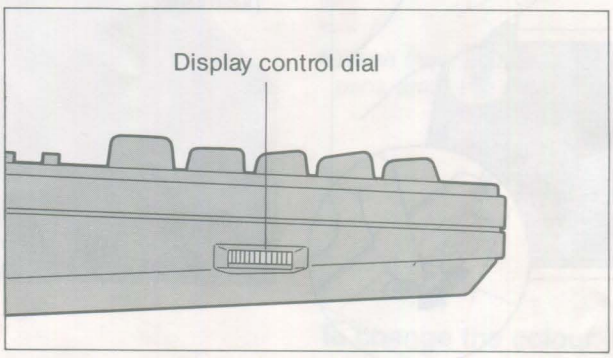


The shift is locked by depressing the shift lock key. To cancel it, depress the shift key. (See page 16.)

The graph mode is set by depressing the GRAPH key. To cancel it, depress the GRAPH key again. (See page 24.)

Display control

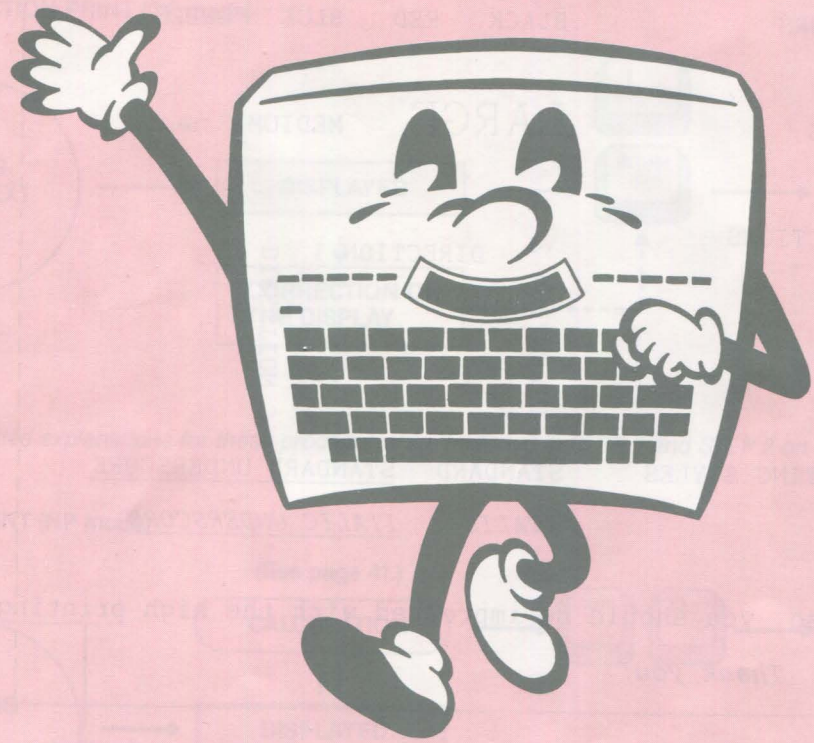
The display control dial adjusts the brightness of the display.

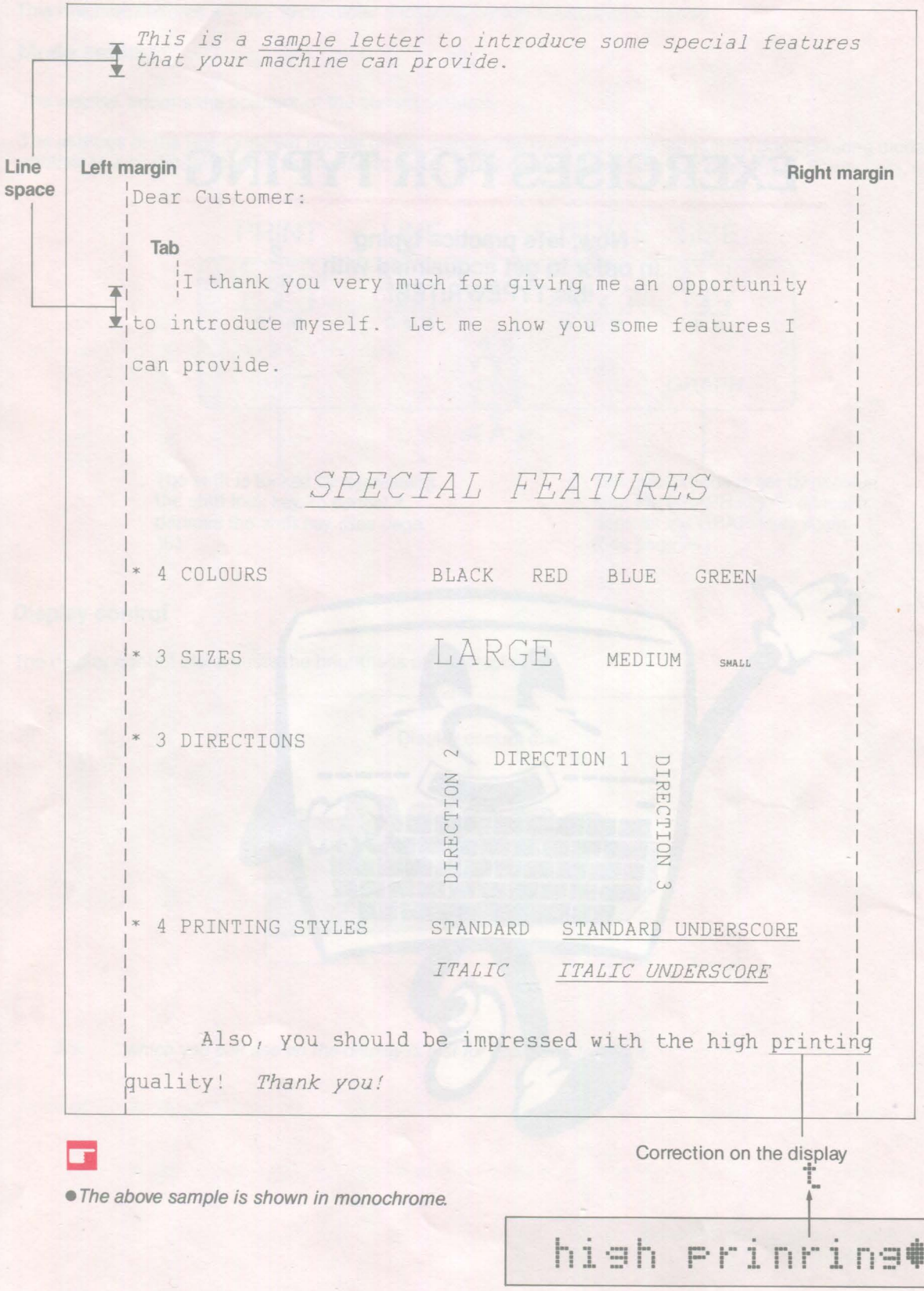


" カナ " which you can see on the display is just for Japanese. Ignore it.

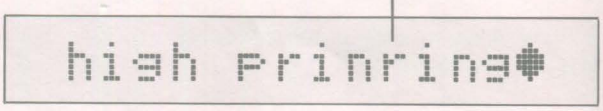
EXERCISES FOR TYPING

Now, let's practice typing in order to get acquainted with this TYPEWRITER!



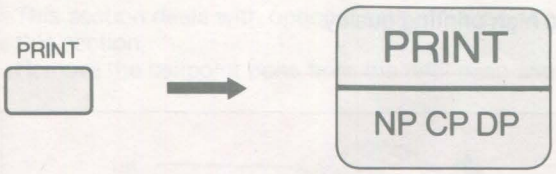

This is a sample letter to introduce some special features that your machine can provide.
Line space
Left margin
Right margin
Dear Customer:
Tab
I thank you very much for giving me an opportunity to introduce myself. Let me show you some features I can provide.
SPECIAL FEATURES
* 4 COLOURS BLACK RED BLUE GREEN
* 3 SIZES LARGE MEDIUM SMALL
* 3 DIRECTIONS
DIRECTION 1
DIRECTION 2
DIRECTION 3
* 4 PRINTING STYLES STANDARD STANDARD UNDERSCORE
ITALIC ITALIC UNDERSCORE
Also, you should be impressed with the high printing quality! Thank you!

Correction on the display

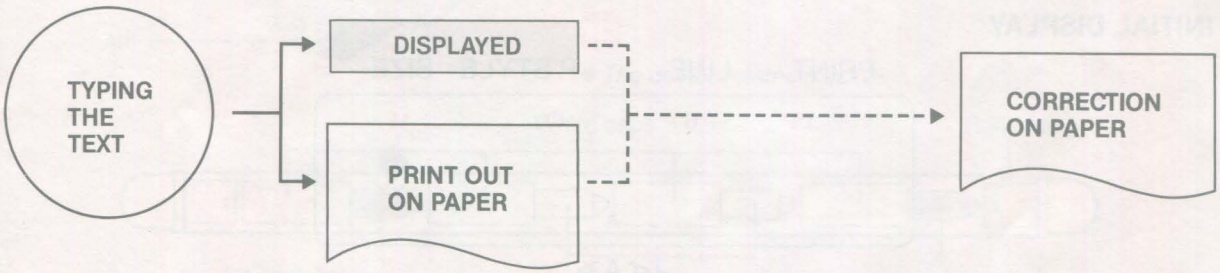


● *The above sample is shown in monochrome.*

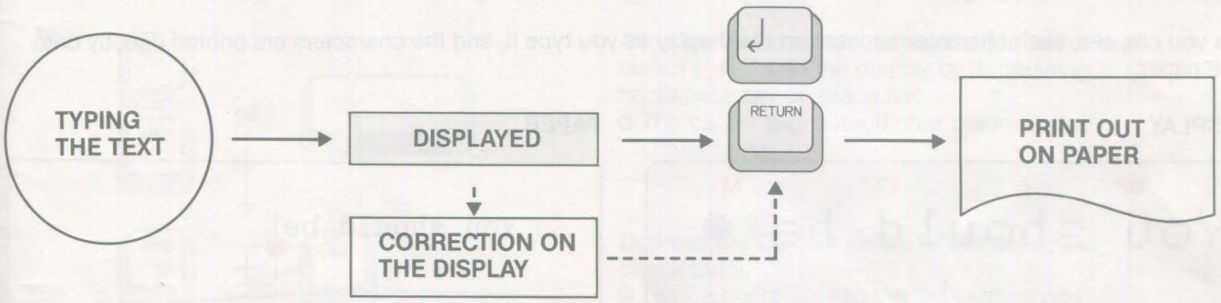
This machine has 3-way printing functions.
For now, just remember these procedures.



1) DIRECT PRINT (DP mode)

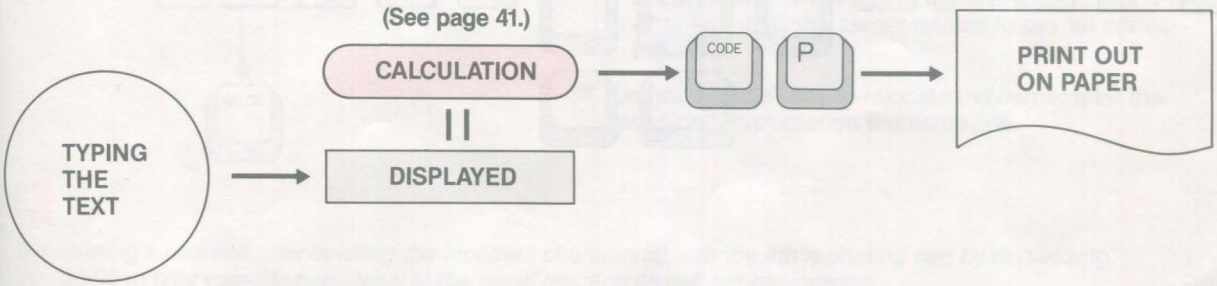


2) CORRECTION PRINT (CP mode)



- *More detailed explanations for these procedures are included in STEP 1 and STEP 2 on the following pages.*

3) NON PRINT (NP mode)



STEP 1 — DIRECT PRINT

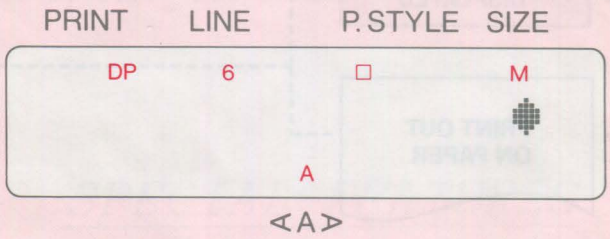
Typing on paper

You should be impressed with the high printing quality.

IMPORTANT!

Before typing the above sentence, check that your machine is set as illustrated below. If your machine is not set in this way, reset the ON/OFF switch after waiting for 2 seconds. After turning the ON/OFF switch on, this display (INITIAL DISPLAY) appears.

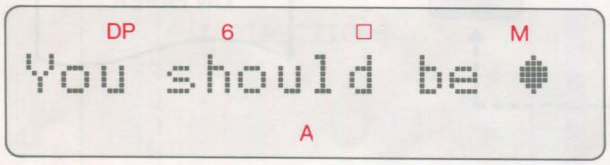
INITIAL DISPLAY



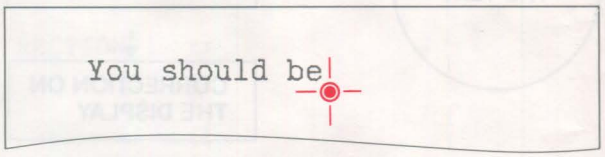
Were you able to set the display?
Now, it's time to try typing.

As you can see, each character appears on the display as you type it, and the characters are printed directly onto the paper.

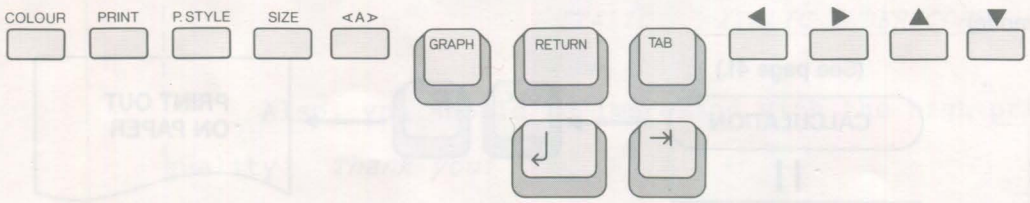
DISPLAY



PAPER



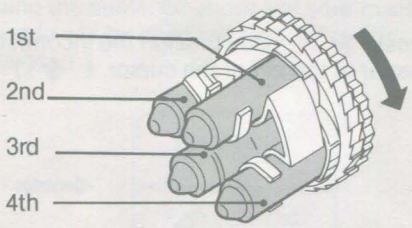
● *Depression of the following keys will clear characters from the display.*



If you typed errors on the paper...

Correction on paper (option)

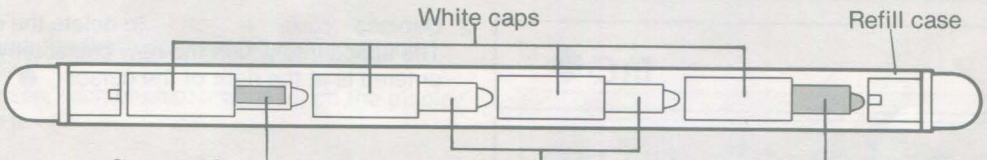
This section deals with optional sets of ballpoint pens for correction on paper. If this does not concern you, skip this section.
Remove the ballpoint pens from the refill case and set them as follows. (Refer to page 5.)



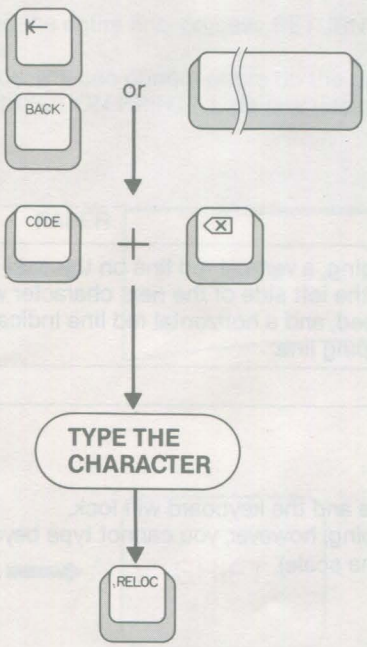
1st (white line) : Correctable pen (black)- option
*2nd (red line) :
3rd (blue line) : Erasing pen- option
4th (green line) : Reprinting pen (black)- option

*You can use standard colour pens (black/red/blue/green) as the 2nd pen. These pens are not for corrections.

- *The carrier rotates clockwise.*



To correct errors



1. Align the incorrect character(s) at the left of the cursor (▒) on the display by depressing backspace key or space bar.
   - The carrier aligns itself after the incorrect character(s).
2. Depress the CODE+delete key to delete the character(s).
   - The carrier rotates to the 3rd erasing pen automatically when deleting character(s).
   - The character will not be deleted at once. It takes time for the correction liquid to soak into the character.
3. Type the correct character(s).
   - The carrier rotates to the 4th reprinting pen automatically when typing the character. After typing it, the carrier rotates to the 1st correctable pen.
4. Depress RELOC key to relocate the carrier after the last typed character on the same line.

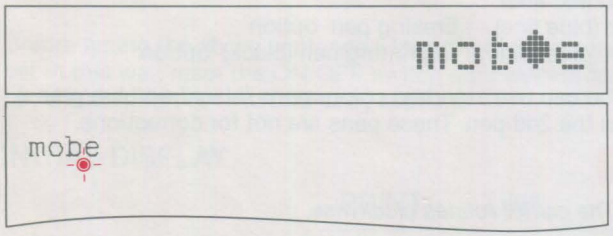
- *If opening a new line after deleting the incorrect character(s), use the 4th reprinting pen by depressing* COLOUR *to type correct character(s) at the same position as deleted character(s).*
- *You can perform 1-line automatic correction.*

To position the carrier for correcting on paper

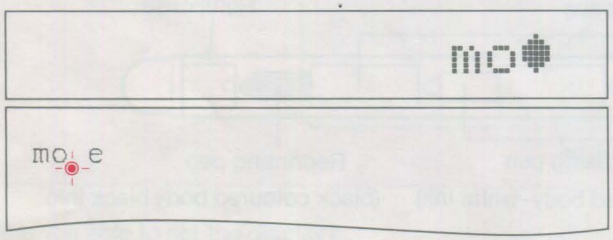
You can position the carrier as in the display.

Depression of the function keys on page 13 will clear characters from the display, thus making correction impossible. Check that characters are correct prior to depressing function keys.

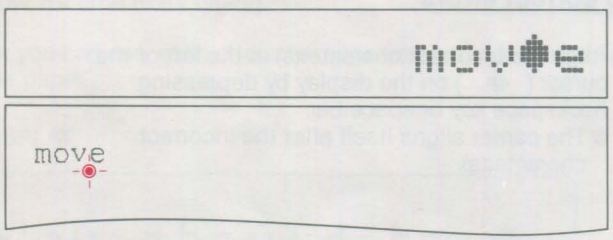
Suppose you typed "mobe" by mistake.
Let's correct "mobe" to "move."



1. Depress BACK once to align the incorrect character at the left of the cursor. (▲)

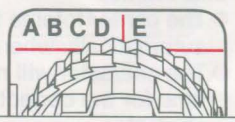


2. Depress CODE + ⌫ to delete the character. The space into which the new character will be entered is at the right of the cursor (▲).



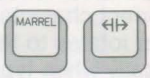
3. Type "v."

TYPING POSITION



During typing, a vertical red line on the card holder indicates the left side of the next character which will be typed, and a horizontal red line indicates the current typing line.

MARGIN RELEASE KEY



(Refer to page 22 .)

If a character is inserted beyond the margins, a beep will sound twice and the keyboard will lock.
By depressing the margin release key, you can perform additional typing, however, you cannot type beyond the left final position (0 on the scale) and right final position (80 on the scale).

- *You cannot insert a character beyond the left margin in CP mode.*

HOT ZONE

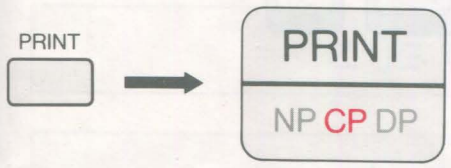
A range of 7 spaces (in M size) prior to reaching the right margin is called "hot zone." A beep sounds at the bginning of the hot zone to advise the operator that the line is almost full.

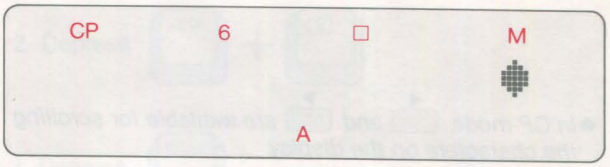
STEP 2 — CORRECTION PRINT

Typing via the display

It is our great pleasure to introduce our newly developed
COLOUR PENGRAPH.

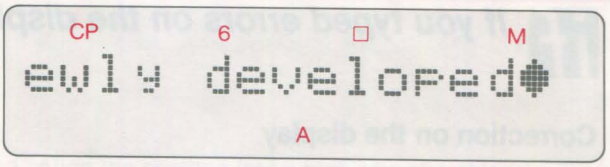
Before typing the sentence above, set your machine as in the following display. By depressing the print key twice, the print mode will be changed from DP to CP.
(Refer to page 9 .)





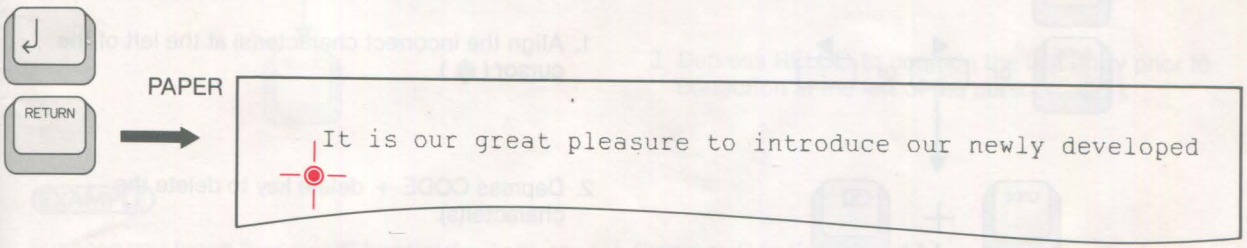
Now, let's type the first line, from "It" to "developed."

As you can see, each character appears on the display as you type it.

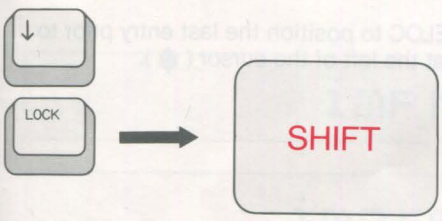


To print out characters on the display

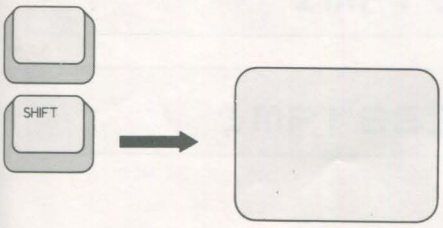
After typing the entire line, depress RETURN to print it. The carrier will return to the left margin with the required line spaces.
In this mode, you can correct errors on the display before depressing RETURN to print. In other words, you can perform "CORRECTION PRINT". Let's practice this later. (See pages 17 ~ 18)



Next, let's type the second line, "COLOUR PENGRAPH." First, depress the shift lock key for continuous printing of capitals. Then type the entire line and depress RETURN to print it.

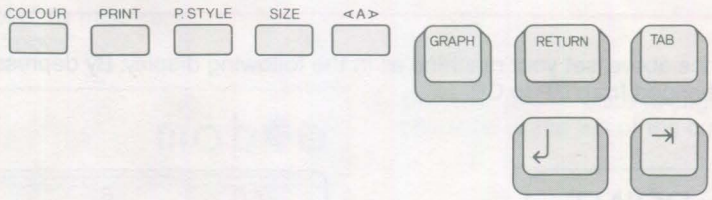


While the shift is locked, the display shows "SHIFT."



By depressing the shift key, shift lock is canceled. And the light goes out.

- *Check that characters are correct prior to depressing function keys. Depression of the following keys will clear characters from the display and will print out, thus making correction impossible.*



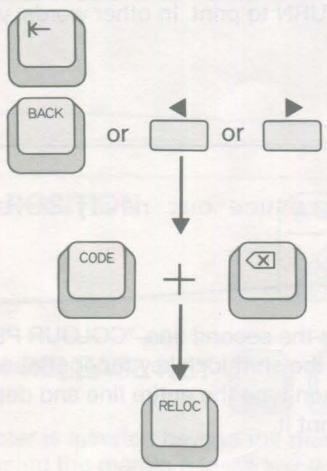
- *In CP mode, ◄ and ► are available for scrolling the characters on the display.*

If you typed errors on the display...

Correction on the display

In CP mode, you can correct errors in the line currently on the display before printing.

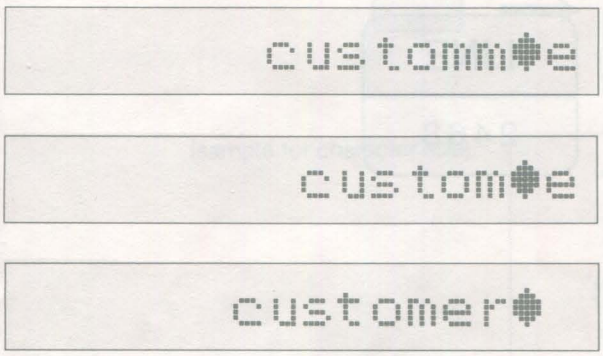
To delete



1. Align the incorrect character(s) at the left of the cursor ( ).
2. Depress CODE + delete key to delete the character(s).
3. Depress RELOC to position the last entry prior to correction at the left of the cursor ( ).

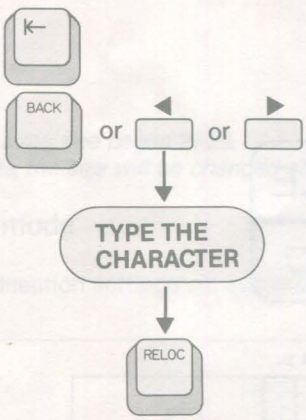
EXAMPLE

Suppose you typed "custommer" by mistake. Let's correct "custommer" to "customer."



1. Depress BACK or ◀ twice.
2. Depress CODE + ⌫.
3. Depress RELOC.

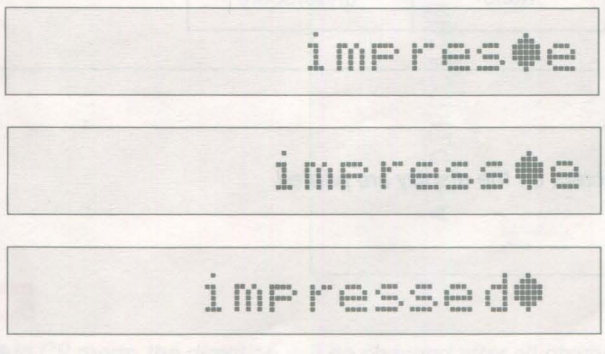
To insert



1. Align the position into which new character(s) will be inserted at the left of the cursor (▲).
2. Type the character(s) to be inserted.
3. Depress RELOC to position the last entry prior to correction at the left of the cursor (▲).

EXAMPLE

Suppose you typed "impresed" by mistake. Let's correct "impresed" to "impressed."



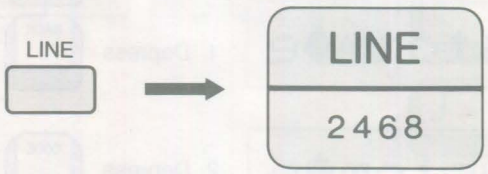
1. Depress BACK or ◀ twice.
2. Type "s."
3. Depress RELOC.

STEP 3—MODE CHANGE

Let's try to type using various kinds of printing functions. By changing the mode (see page 9 , "Mode setting".), you can enjoy typing various documents.

Line space mode

4 different line space mode settings are available.

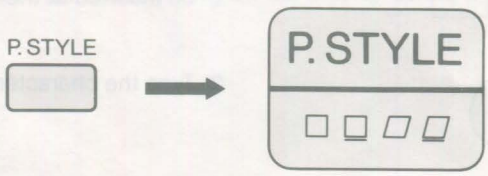


2 — 2 mm (0.08 in.) line spacing
4 — 4 mm (0.16 in.) line spacing
6 — 6 mm (0.24 in.) line spacing
8 — 8 mm (0.31 in.) line spacing

- *Be careful of the character size to avoid overlapping.*

Print style mode

This machine has 4 built-in print styles.

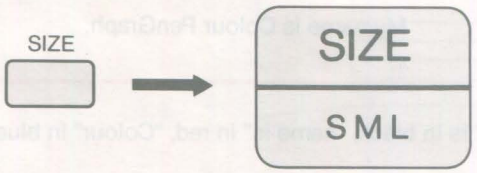


HAPPY	HAPPY	*HAPPY*	*HAPPY*
Standard	Standard underscore	Italic	Italic underscore

- *In CP mode, the print style will be changed after all characters on the display are printed.*

Size mode

3 different size settings of characters/graphs are available.

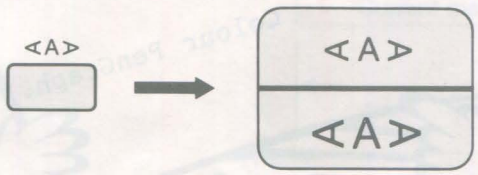


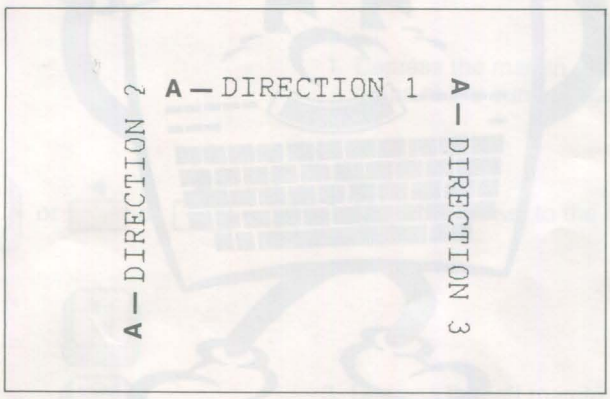
(sample for character size)

- *For graph sizes, see pages 27-29.*
- *In CP mode, the size will be changed after all characters on the display are printed.*

Direction mode

3 different direction settings are available.





- *In CP mode, the direction will be changed after all characters on the display are printed.*

STEP 4 — COLOUR CHANGE

You can enjoy typing in 4-colour.
You can change the colour by depressing the COLOUR regardless of the carrier position. (Refer to page 7.)

My name is Colour PenGraph.

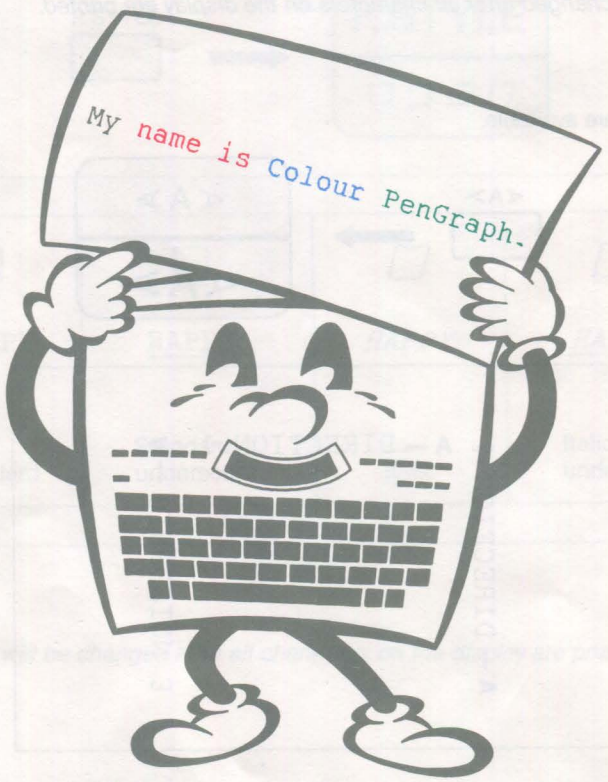
Let's type the above sentence, "My" is in black, "name is" in red, "Colour" in blue and "PenGraph" in green.

If PRINT mode is in DP,

1. Type "My." Depress space bar.
2. Depress COLOUR . ——→ The pen position will be changed to red.
   Type "name is." Depress space bar.
3. Depress COLOUR . ——→ The pen position will be changd to blue.
   Type "Colour." Depress space bar.
4. Depress COLOUR . ——→ The pen position will be changed to green.
   Type "PenGraph."

If PRINT mode is in CP,

The operations are the same as those in DP, but the pen position will be changed to the next colour after all characters on the display are printed.

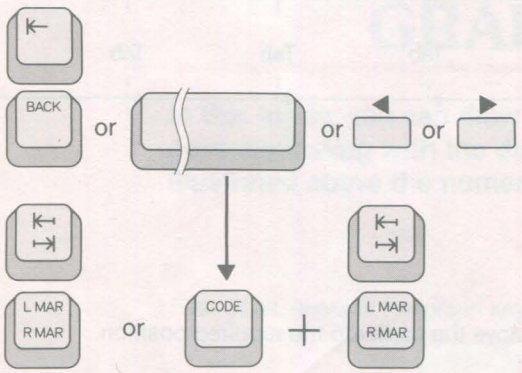


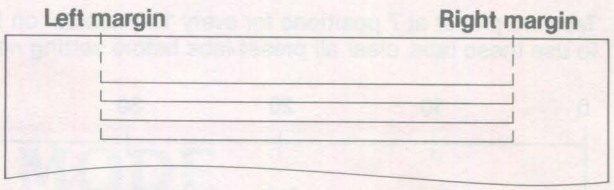
STEP 5 — FORMAT CHANGE

You can change the format in DP mode.

Margins

To set the margins





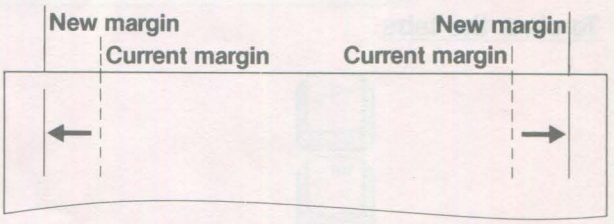
1. Move the carrier to the required position.

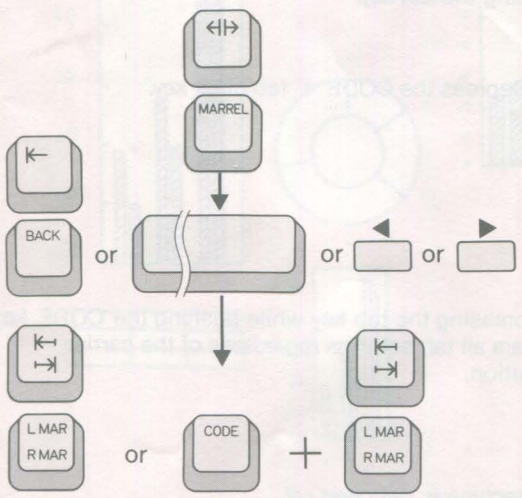
2. Depress the left margin set key to set the left margin. Depress CODE + right margin set key to set the right margin.

3. A beep sounds to affirm that the margin setting operation is in effect.

- *The left margin cannot be set to the right of the right margin and vice versa.*
- *The distance between the left and the right margins must be no less than 2 spaces (in M size).*
- *A new margin clears the old margin.*
- *Margin settings are cleared when the machine is switched off.*

To set the margins beyond the current margins





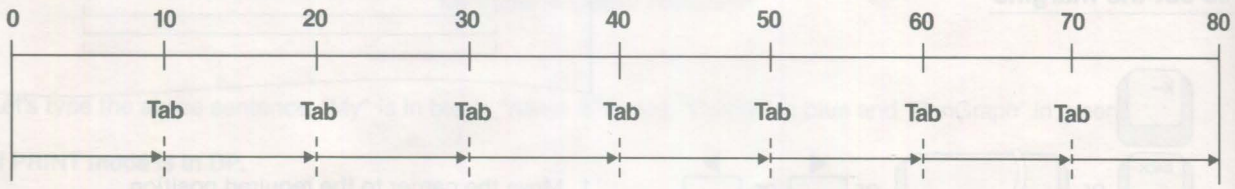
1. Depress the margin release key when the carrier stops at the current margins.

2. Move the carrier to the required margin set position.

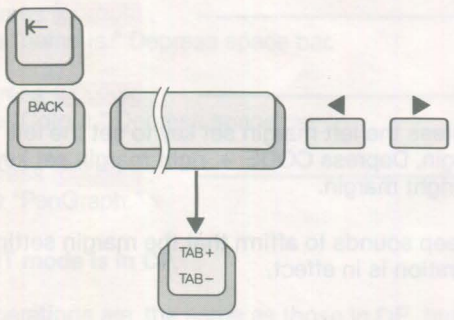
3. Depress the left margin set key to set the left margin. Depress CODE + right margin set key to set the right margin.

Tabs

Tabs are preset at 7 positions for every 10-character on the scale indicated on the carrier cover. If you do not want to use these tabs, clear all preset tabs before setting new ones. (See "Tab All Clear.")



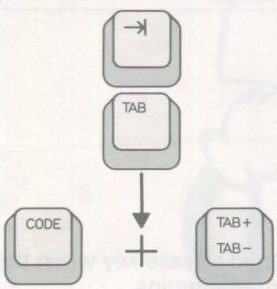
To set the tabs



1. Move the carrier to the required position.
2. Depress the tab set key.
3. A beep sounds to affirm the setting of the tab.

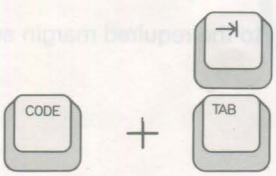
- *Up to 16 tabs can be set.*
- *If you set more than 16, a beep sounds twice for error.*

To clear the tabs



1. Move the carrier to the tab set position by depressing the tab key.
2. Depress the CODE + tab clear key.

Tab all clear



Depressing the tab key while pushing the CODE key clears all tab settings regardless of the carrier position.

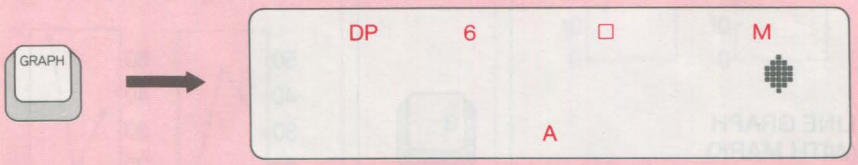
- *All the tab settings are cleared except preset tabs when the machine is switched off.*

GRAPH MODE

In this mode, you can draw 11 types of graphs and a table by communicating with the display. These 11 graphs and a table are illustrated above the numeric keys respectively.

First of all, depress the graph key. Then the graph mode is displayed.

By depressing the graph key again, the graph mode is cleared.



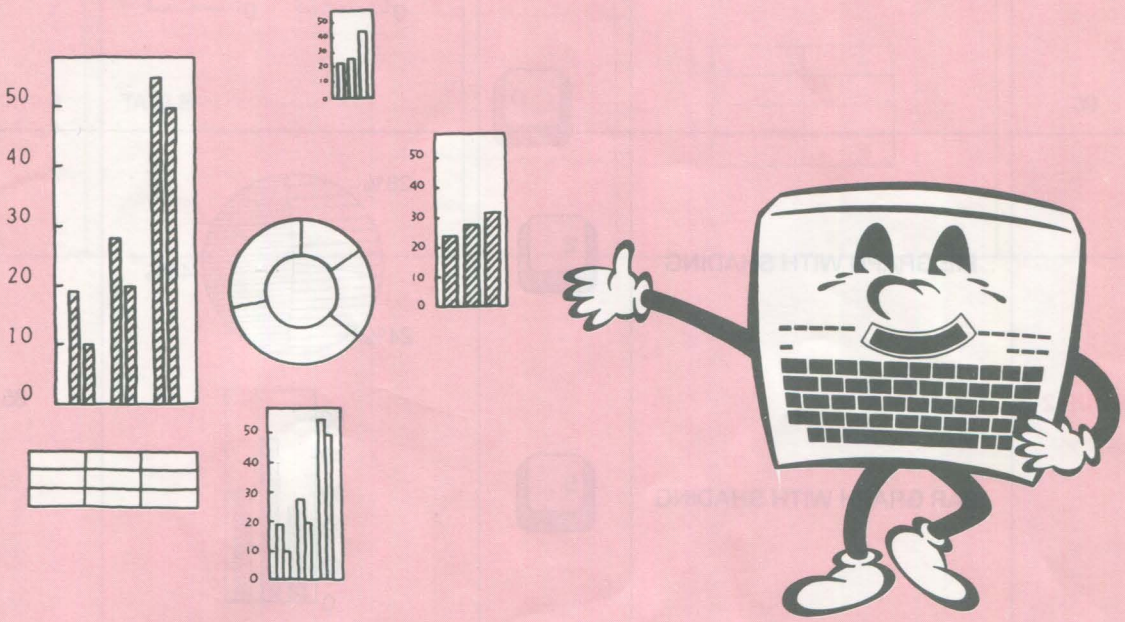
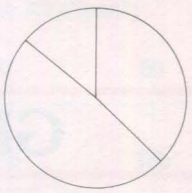
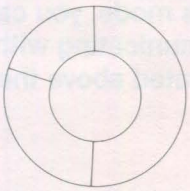
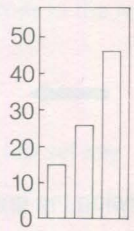
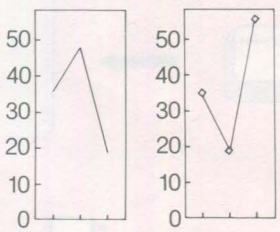
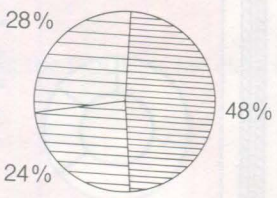
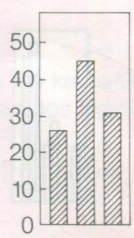
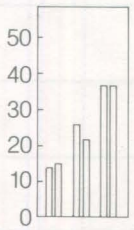
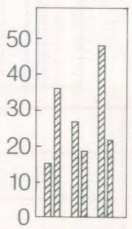
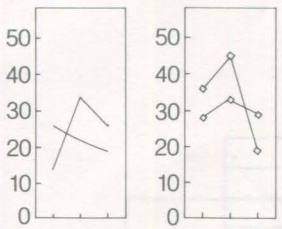
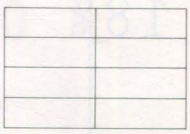


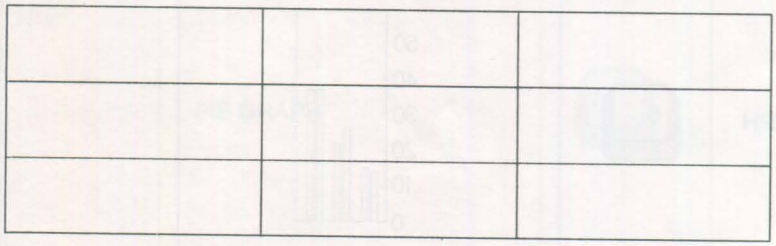
TABLE OF GRAPHS

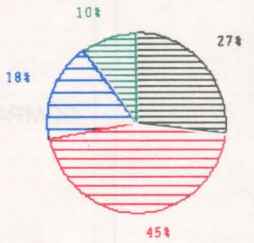
		KEY NO.	GRAPH	SEE PAGE
GROUP 1	PIE GRAPH	1		33
	CONCENTRIC PIE GRAPH	3		
	BAR GRAPH	4		
	LINE GRAPH (WITH MARK)	8		
GROUP 2	PIE GRAPH WITH SHADING	2		35
	BAR GRAPH WITH SHADING	5		

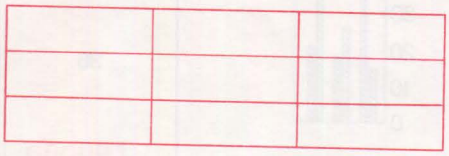
		KEY NO.	GRAPH	SEE PAGE
GROUP 3	COMPARATIVE BAR GRAPH	6		36
	COMPARATIVE BAR GRAPH WITH SHADING	7		
	COMPARATIVE LINE GRAPH (WITH MARK)	9		
GROUP 4	TABLE	0		39

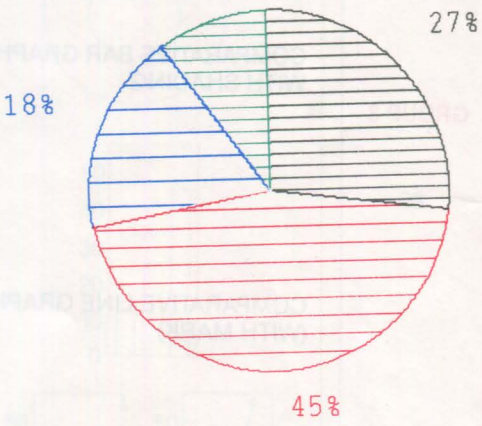
GRAPH SIZE

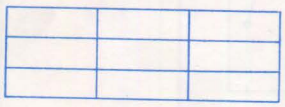
3 sizes (L.M.S) are available in the graph mode by depressing SIZE key.

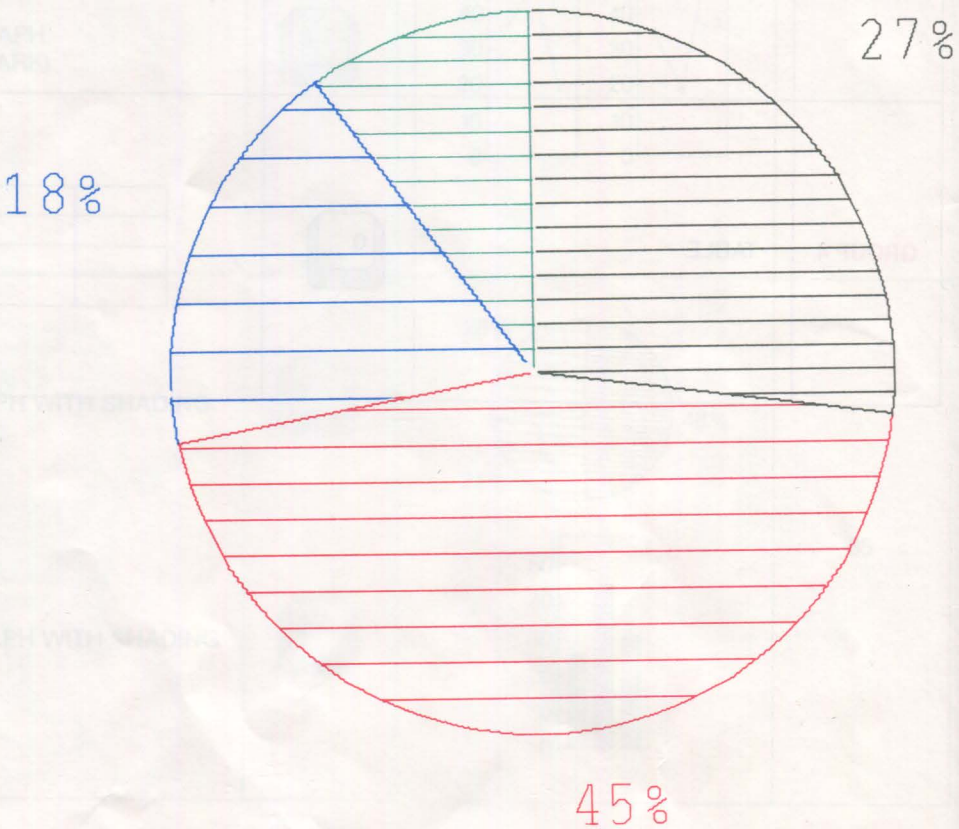


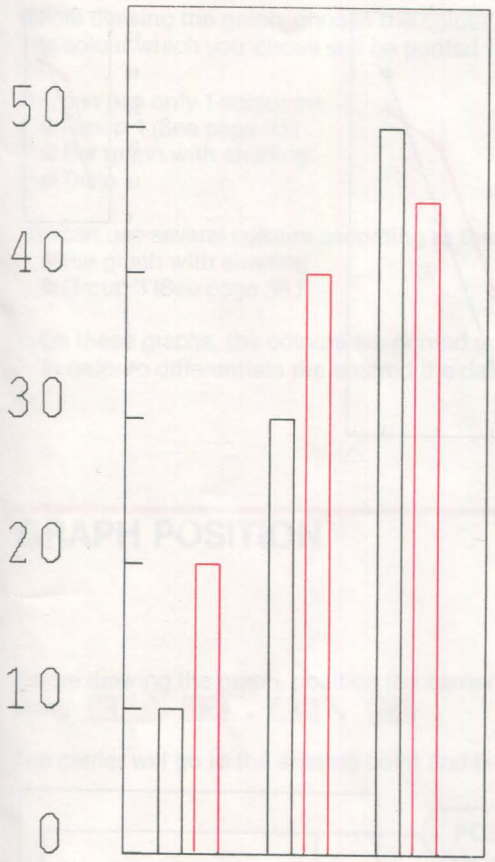








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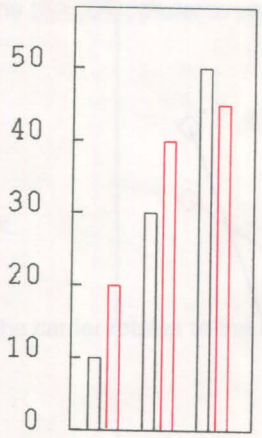
20
10
0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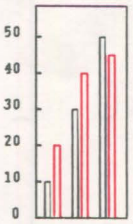
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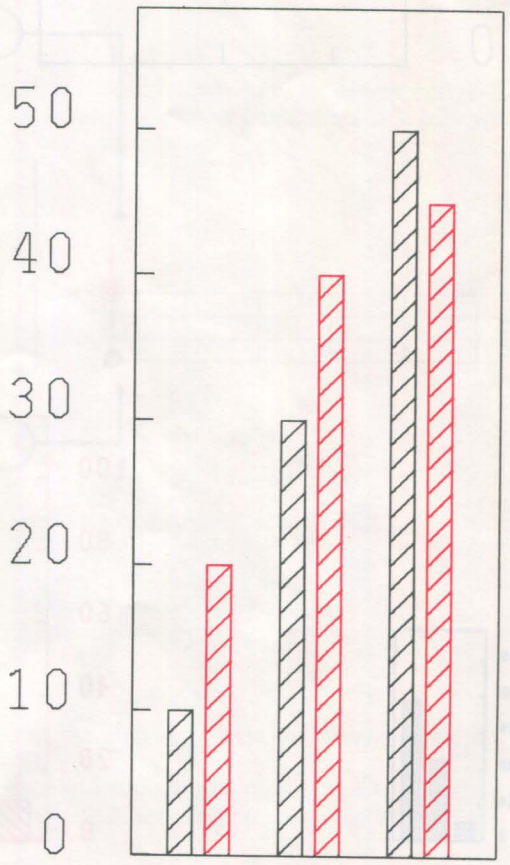
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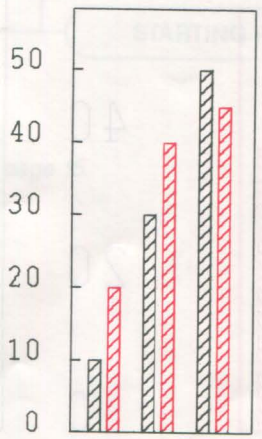
40
30
20
10
0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20
10
0

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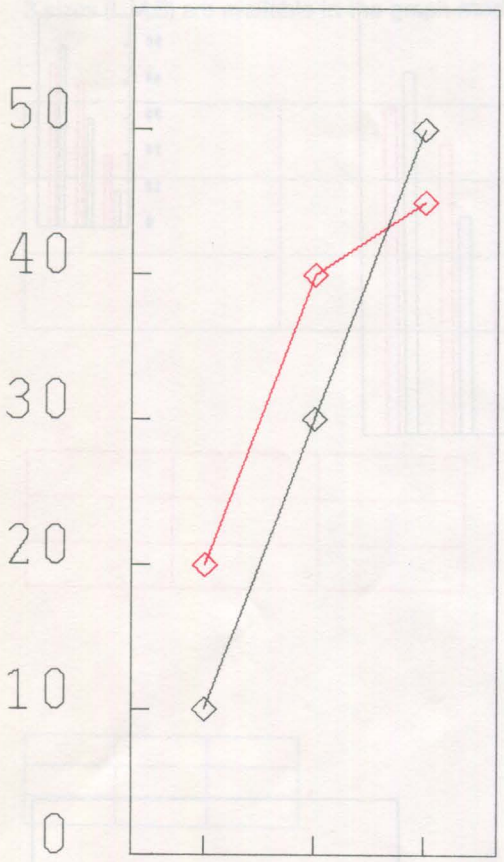
30
20
10
0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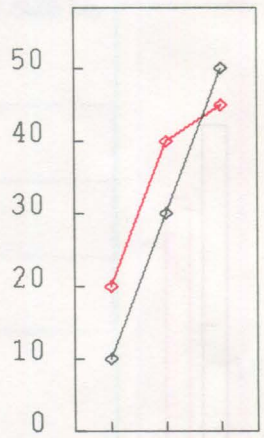
30
20
10
0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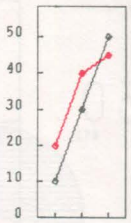
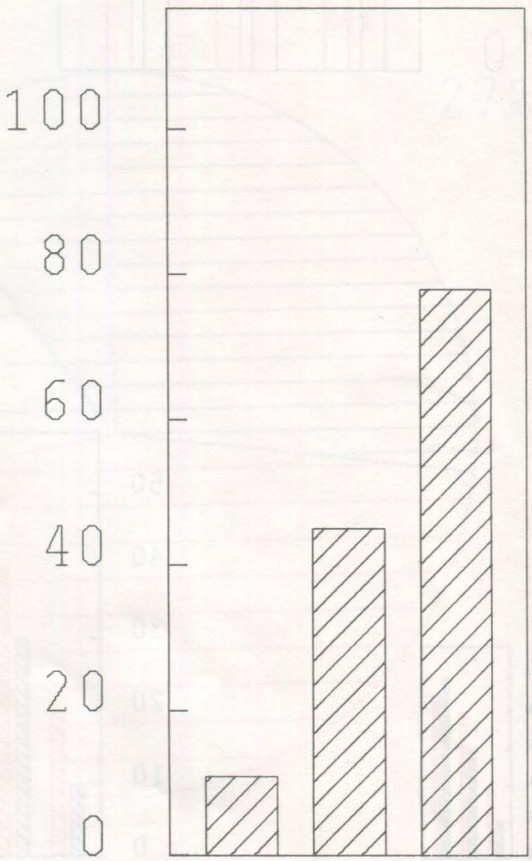
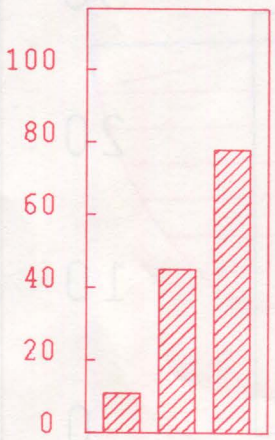
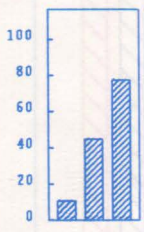
40
30
20
10
0


50
40
30
20
10
0


100
80
60
40
20
0


100
80
60
40
20
0


100
80
60
40
20
0

GRAPH COLOUR

Before drawing the graph, choose the colour by depressing the COLOUR . (Refer to page 7.)
The colour which you chose will be printed first.

You can use only 1-colour on:
- Group 1 (See page 33.)
- Bar graph with shading
- Table

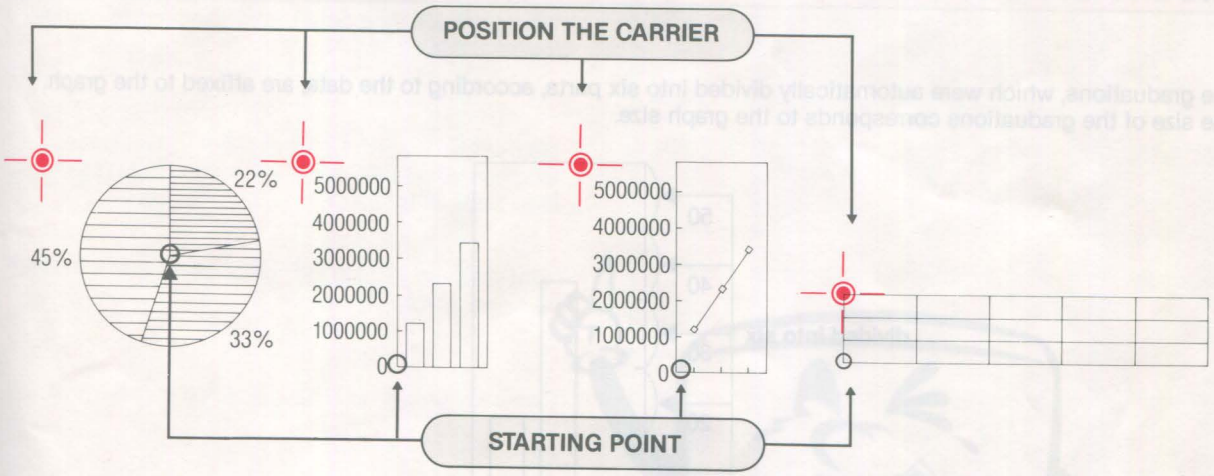
You can use several colours according to the entered data on:
- Pie graph with shading
- Group 3 (See page 36.)

On these graphs, the colours are printed successively (i.e. the carrier rotates to the next colour automatically in order to differentiate the entered the data).

GRAPH POSITION

Before drawing the graph, position the carrier to the upper left of the graph to be drawn, as illustrated below by using ◀ , ▶ , ▲ , ▼ .

The carrier will go to the starting point and begin drawing the graph.

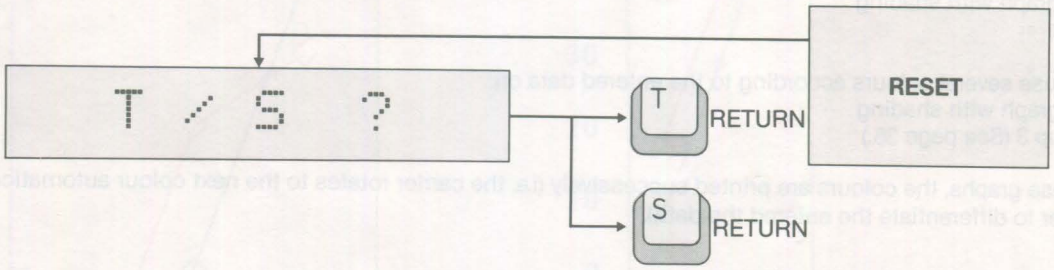


●*Refer to "TYPING POSITION" on page 15.*

GRAPH TEST

When you finish entering all data, "T/S ?" is displayed.
If you depress T and RETURN, you can check that the position and size of the graph are correct before printing, since the carrier traces the graph without actually printing.

If the results of this test are not satisfactory, you can reset the graph position and size. After resetting, start drawing.



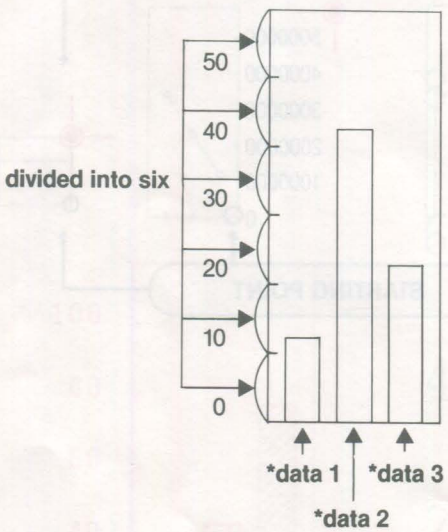
(Start drawing the graph)

Now, remember the above procedures. Detailed explanation for drawing the graph is included in "EXERCISES FOR GRAPHING."

- *When "T/S ?" is displayed and a beep sounds twice after depressing T or S, the graph cannot be drawn. Reset the graph position and size.*

GRAPH GRADUATION

The graduations, which were automatically divided into six parts, according to the data, are affixed to the graph. The size of the graduations corresponds to the graph size.



*The data constitutes your numeric information for graphing.

Regarding the pie graph with shading, percentages, which were calculated automatically on the strength of the data, are affixed to the graph instead of graduations.

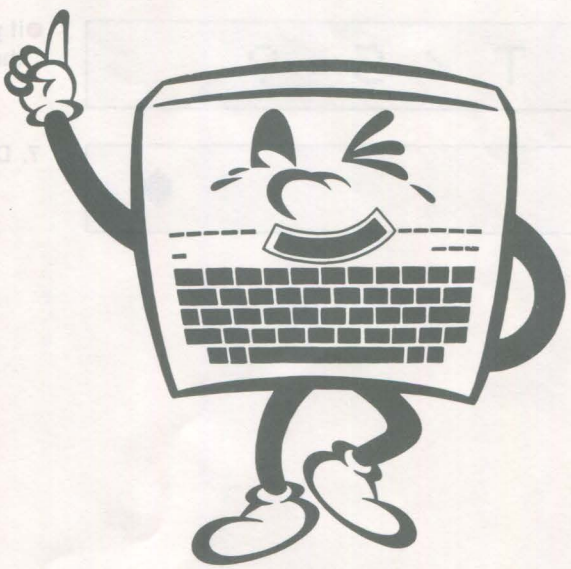
EXERCISES FOR GRAPHING

In this step, let's try drawing some actual graphs.

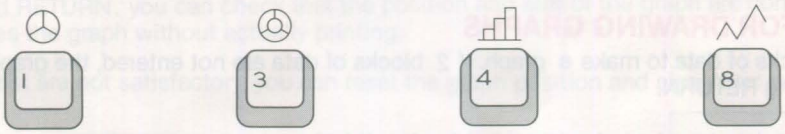
CHECK POINTS FOR DRAWING GRAPHS

- Enter at least 2 blocks of data to make a graph. If 2 blocks of data are not entered, the graph mode will be cleared by depressing RETURN.
- If you enter incorrect data (number), depress [C/AC] to clear it before depressing RETURN.
- If you enter more than 7 digits of data (including decimal point), a beep sounds twice for error after depressing RETURN.
  Re-enter the data.
- When entering data, use only numeric and decimal point (period) keys.
- PRINT/LINE/P.STYLE modes are not available in the graph mode.
- You can enter a maximum of 12 data blocks;
  on pie graph.
  on bar/line graphs in M, S sizes.
- You can enter a maximum of 9 data blocks·
  on bar/line graphs in L size.

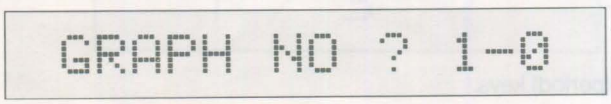
IMPORTANT!
First confirm that the graph mode is displayed. Set the graph size (See page 27-29), colour and position (See page 30) before drawing the graph (i.e. before depressing [S] and RETURN).



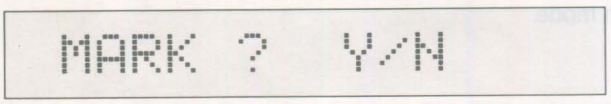
STEP 1 — GROUP 1



To draw graph

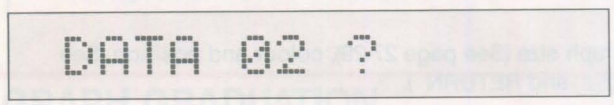


1. Depress GRAPH and choose the graph number.
   Depress RETURN.

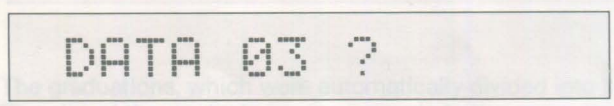


2. If you choose No. 8 (8), the display for marking appears. Depress Y and RETURN for marking, N and RETURN for no-marking.
   If you choose No. 1 (1) or No. 3 (3) or No. 4 (4), you do not need to take this step.

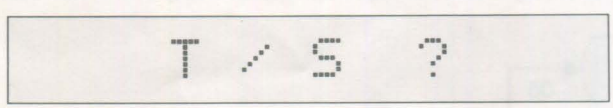
3. Enter data 1, which is your first item of information for the graph.
   After entering data, depress RETURN.



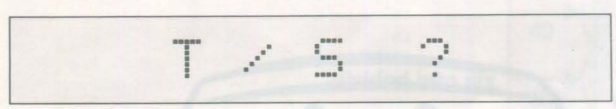
4. Enter the next data and depress RETURN.
   Continue until all data is entered.



5. When you finished entering all the necessary data, just depress RETURN.



6. Depress T and RETURN in order to test graph.
   Depress S and RETURN in order to start drawing.
   (See page 31 for test.)



- If you depress S and RETURN again, you can draw the same graph.

7. Depress GRAPH to clear the graph mode.

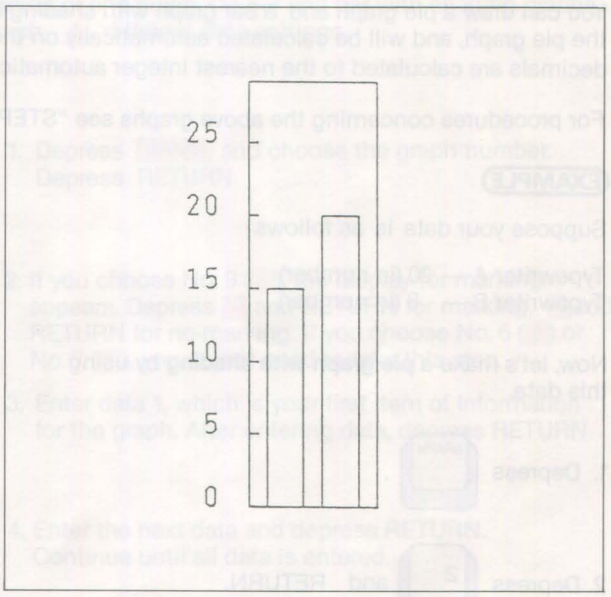
EXAMPLE

Suppose your data is as follows.

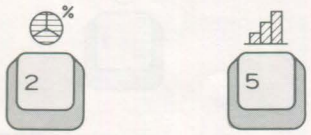
Mr. A — 15 (points)
Miss. B — 20 (points)

Now, let's make a **bar graph** by using this data.

1. Depress GRAPH.
2. Depress 4 and RETURN.
3. Depress 1 5 and RETURN.
4. Depress 2 0 and RETURN.
5. Depress RETURN.
6. Depress S and RETURN.
7. Depress GRAPH.



STEP 2 — GROUP 2



You can draw a pie graph and a bar graph with shading by choosing 2 / 5 . The percentage is affixed to the pie graph, and will be calculated automatically on the strength of the data. In printing out the percentage, the decimals are calculated to the nearest integer automatically.

For procedures concerning the above graphs see "STEP 1" on page 33.

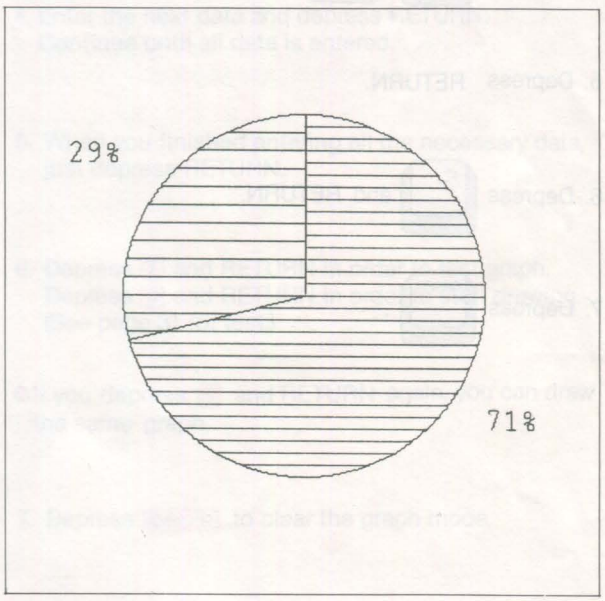
EXAMPLE

Suppose your data is as follows

Typewriter A — 20 (in number)
Typewriter B — 8 (in number)

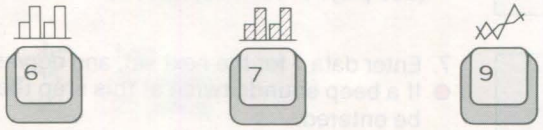
Now, let's make a **pie graph with shading** by using this data.

1. Depress GRAPH .
2. Depress 2 and RETURN.
3. Depress 2 0 and RETURN.
4. Depress 8 and RETURN.
5. Depress RETURN.
6. Depress S and RETURN.
7. Depress GRAPH .



- *The above sample is shown in monochrome.*
- *A differential of 1% may occur when printing out percentages.*

STEP 3 — GROUP 3



You can draw the different data settings by bar, bar with shading or line graph. On bar and bar with shading graphs, you can enter 2 different data settings, and on the line graph, 4 different data settings.

To draw graph

```
GRAPH NO ? 1-0
```

1. Depress GRAPH and choose the graph number. Depress RETURN.

```
MARK ? Y/N
```

2. If you choose No. 9 (9), the display for marking appears. Depress Y and RETURN for marking, N and RETURN for no-marking. If you choose No. 6 (6) or No. 7 (7), you do not need to take this step.

```
DATA 01 ?
```

3. Enter data 1, which is your first item of information for the graph. After entering data, depress RETURN.

```
DATA 02 ?
```

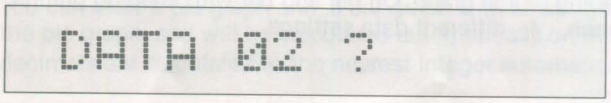
4. Enter the next data and depress RETURN. Continue until all data is entered.

```
DATA 03 ?
```

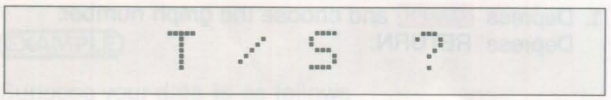
5. When you have finished entering all the necessary data for the first set, just depress RETURN.

6. Depress T and RETURN in order to test the graph.
   Depress S and RETURN in order to start drawing.
   (See page 31 for test.)

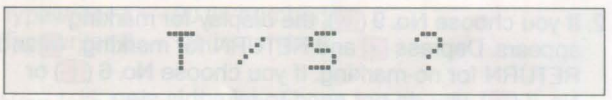
7. Enter data 1 for the next set, and depress RETURN.
   - If a beep sounds twice at this step the data cannot be entered.



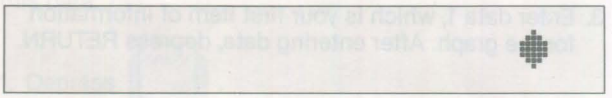
8. Enter the next data and depress RETURN.



9. Depress T and RETURN in order to test the graph.
   Depress S and RETURN in order to start drawing.



- If you want to draw comparative line graph, repeat steps No.7 to No.9 until completing all data.



10. Depress GRAPH to clear the graph mode.

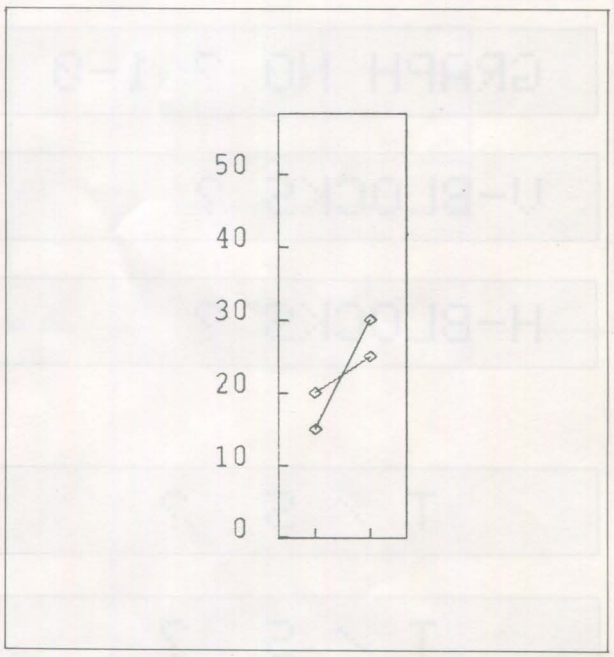
EXAMPLE

Suppose your data is as follows.

	Jan.	Feb.
Company A —	15	30 (sales)
Company B —	20	25 (sales)

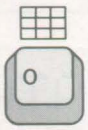
Now, let's make a **comparative line graph with marks** by using this data.

1. Depress GRAPH.
2. Depress 9 and RETURN.
3. Depress Y for marking and RETURN.
4. Depress 1 5 and RETURN.
5. Depress 3 0 and RETURN.
6. Depress RETURN.
7. Depress S and RETURN.
8. Depress 2 0 and RETURN.
9. Depress 2 5 and RETURN.
10. Depress S and RETURN.
11. Depress GRAPH or RETURN.



● *The above sample is shown in monochrome.*

STEP 4 — TABLE

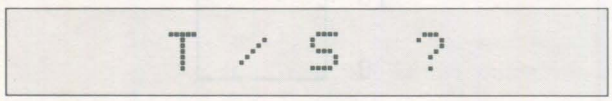


To draw table

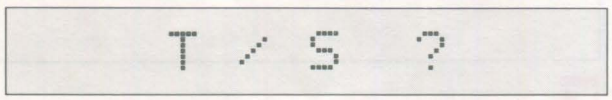
1. Depress GRAPH , 0 and RETURN.

2. Enter the number of vertical blocks for the table and depress RETURN.
   - You can enter a maximum of 12 blocks.

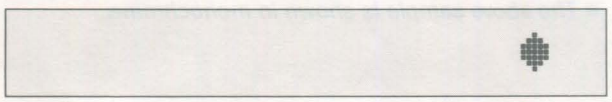
3. Enter the number of horizontal blocks for the table and depress RETURN.
   - You can enter the maximum of;
     12 blocks in S size.
     9 blocks in M size.
     5 blocks in L size.



4. Depress T and RETURN in order to test the table.
   Depress S and RETURN in order to start drawing.
   (See page 31 for test.)



- If you depress S and RETURN again, you can draw the same table.

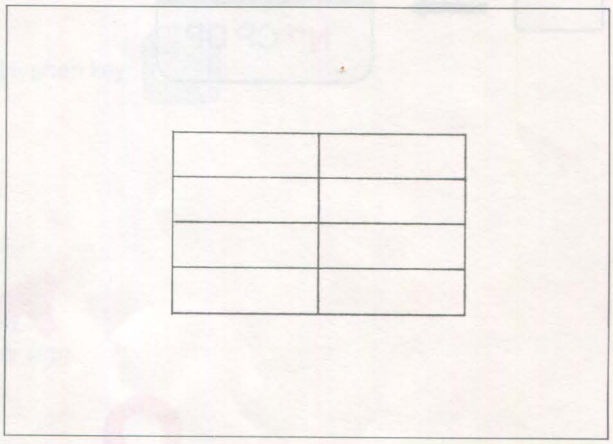


5. Depress GRAPH to clear the graph mode.

EXAMPLE

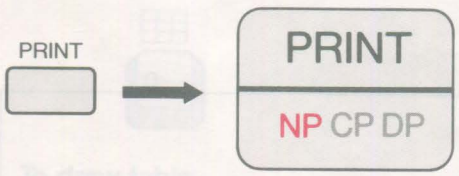
Suppose the number of vertical blocks is 4, horizontal blocks is 2. Now, let's make a **table** by using these numbers.

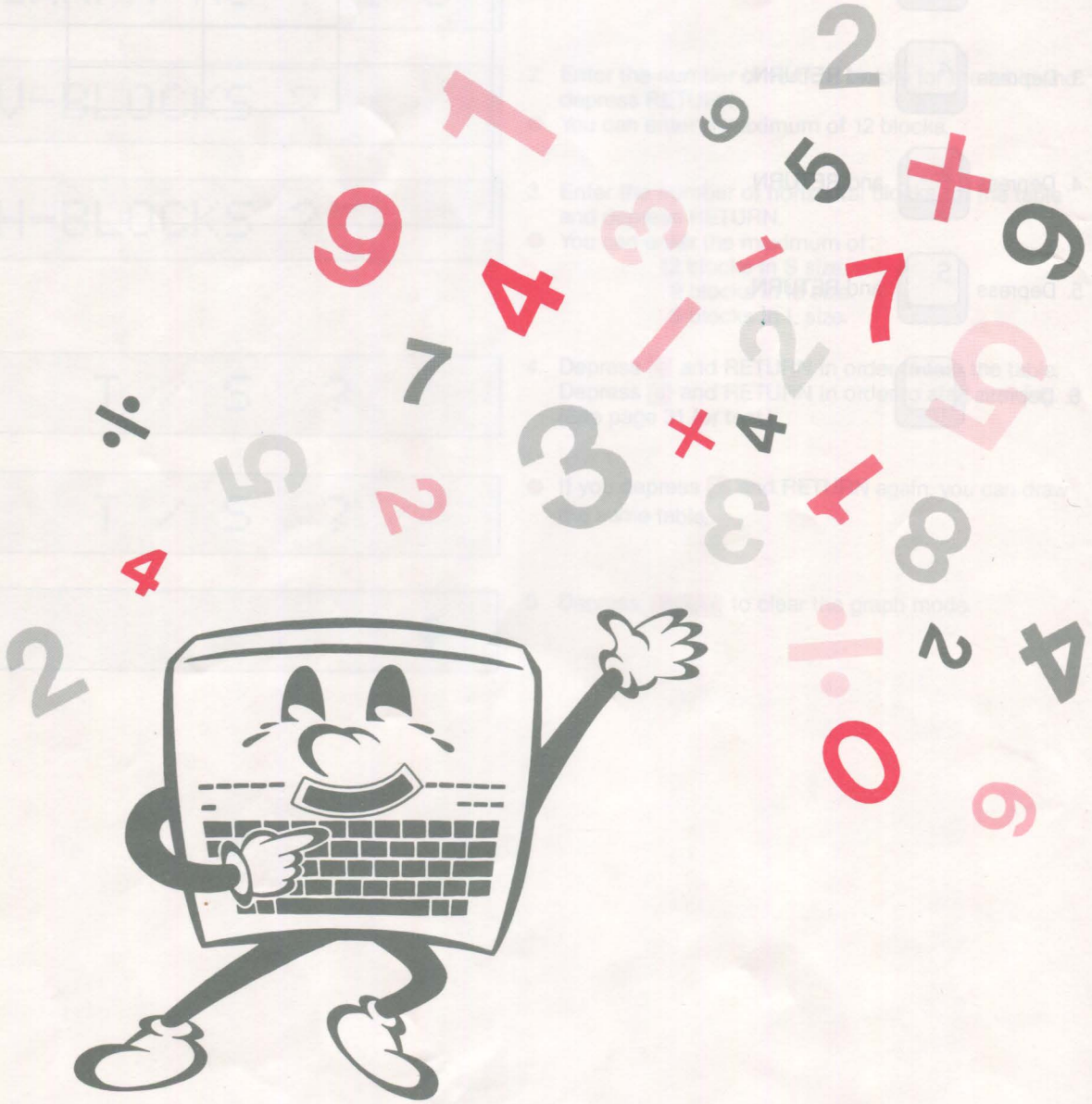
1. Depress GRAPH .
2. Depress 0 and RETURN.
3. Depress 4 and RETURN.
4. Depress 2 and RETURN.
5. Depress S and RETURN.
6. Depress GRAPH .



CALCULATION

If the PRINT mode is in NP, the 4 basic operations of calculation can be carried out.
Set the PRINT mode to NP by depressing PRINT key.





To use the calculation keys

In the calculation mode, use the following keys.

Arithmetic keys [×] [÷] [+] [−] [=]

Clear key [C/AC]

Numerical keys [1] ~ [0]

Hyphen key [=]

Decimal point [.]

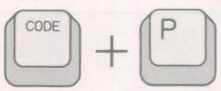
- *You cannot use the equal key in the alphanumeric keyboard.*
- *The hyphen key should be used as a negative minus number sign.*

e.g. $-5 \times 10 = -50$

- *Before calculating, depress the clear key twice for all clear.*

To print the calculations

By depressing [P] with [CODE] the numeral(s) on the display are printed out.

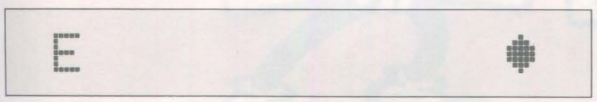


To correct the calculations

To correct the calculation input on the display, depress [CAC] as specified below.

- ONCE for canceling numeral(s) - the numeral(s) disappears.
- TWICE for all clear.

In case the error sign "E" appears



The display indicates "E" (ERROR) sign and a beep sounds twice in the following cases:

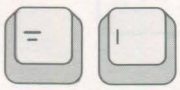
- When the result of an integer of more than 12 digits is entered.
- When the number is divided by 0 in a division calculation.
- When an integer of more than 12 digits is entered.

In this case, the "E" will be cleared by depressing the clear key.

EXAMPLE

Addition and Substraction:
e.g. $-1+2-3=-2$

1. Depress C/AC TWICE for all clear.

2. Depress 

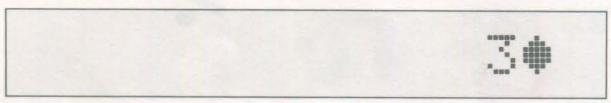
.

3. Depress +

.

4. Depress −

.



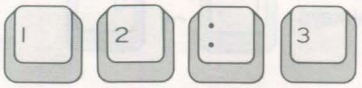
5. Depress = .

6. Depress CODE

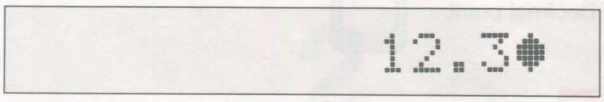
to print the answer, or depress C/AC ONCE to clear.

Multiplication and Division:
e. g. $12.3 \times 456 \div 4 = 1402.2$

1. Depress C/AC TWICE for all clear.

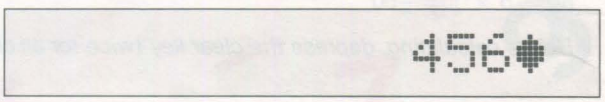
2. Depress 

.



3. Depress ×

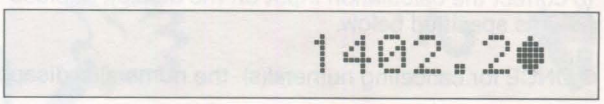
.



4. Depress ÷

.

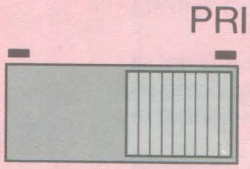
5. Depress = .

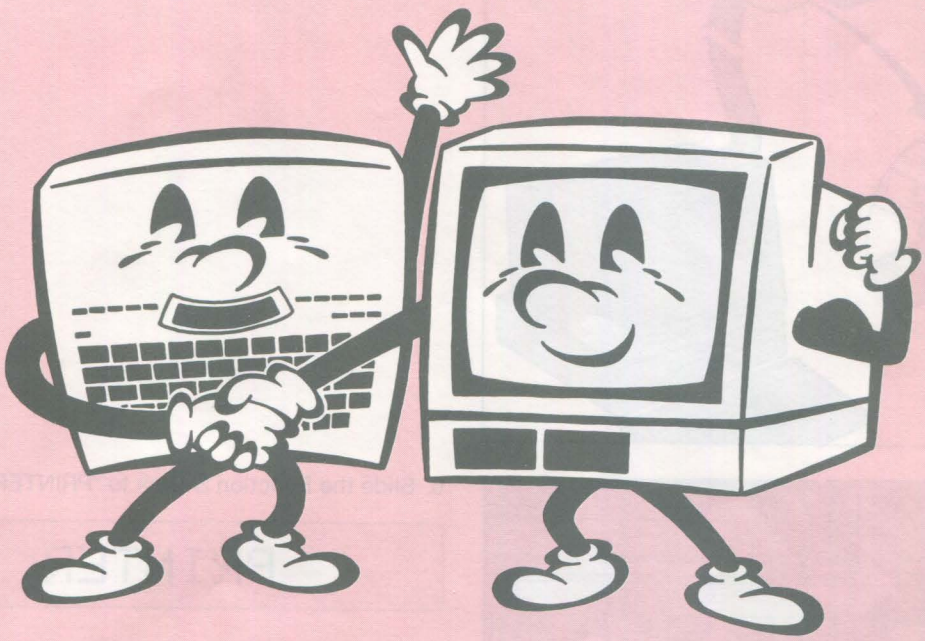


6. Depress CODE

to print the answer, or depress C/AC ONCE to clear.

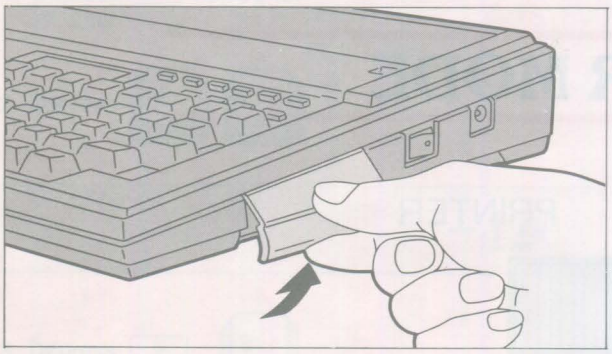
PRINTER MODE



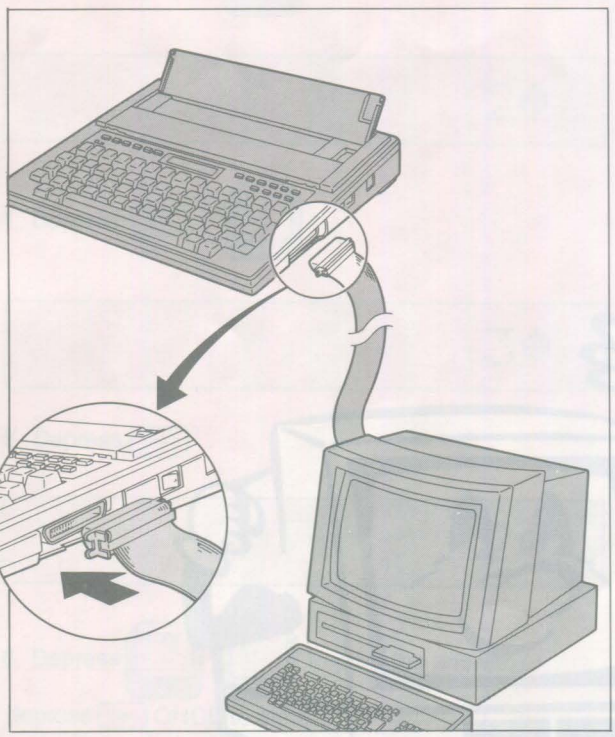


Setting the Colour PenGraph for PRINTER Mode

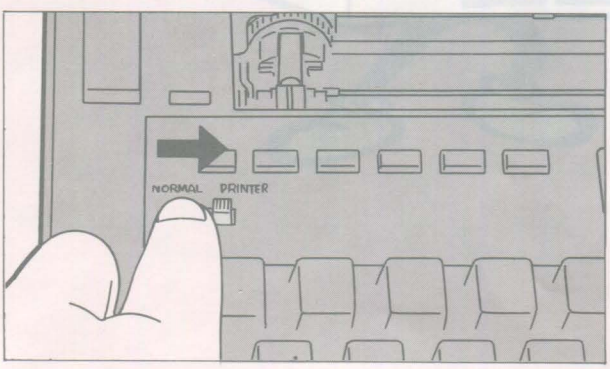
Printer Mode is initiated in the following way.



1. Remove the interface connector cover at the right side of the PenGraph. The PenGraph is equipped with a Centronics compatible parallel interface.



2. Connect the PenGraph to the computer by the appropriate cable.
3. Switch on the computer.
4. Switch on the PenGraph.
5. Set paper in Normal Mode. Advance paper to your desired position using the Paper Injector or Index Key.



6. Slide the Function Switch to "PRINTER".

PRINTER

The PenGraph has now entered the Text Mode within the Printer Mode and is now ready to receive data from the computer. In the Printer Mode the keyboard of the PenGraph is locked.

7. Send DC2 from the computer to the PenGraph when you wish to enter the Graphics Mode.

The PRINTER Mode is divided into two modes. Text Mode and Graphics Mode.

Text Mode

When the Printer Mode is initiated, the PenGraph directly enters the Text Mode. In this mode the machine accepts data from the computer in the form of characters and prints it out. The PenGraph functions as a normal printer.

(e.g.)

LPRINT "Colour PenGraph"

```
Colour PenGraph
```

Graphics Mode

Graphics Mode is entered via Text Mode.
Send DC2 from the computer to the PenGraph.
DC2 is the control code which tells the PenGraph to enter the Graphics Mode.
DC2 is 18 in Decimal or 12H in Hexadecimal in the Code Table on page 56. It can be input as follows:

LPRINT CHR$ (18)

In the Graphics Mode, the received data is interpreted as graphics commands and graphics data. (They will be explained later.)

When you return to the Text Mode, input CR (Carrier Return) + LF (Line Feed) codes first, then send DC1 to the PenGraph. DC1 is 17 in Decimal or 11H in Hexadecimal.

LPRINT CHR$ (17)

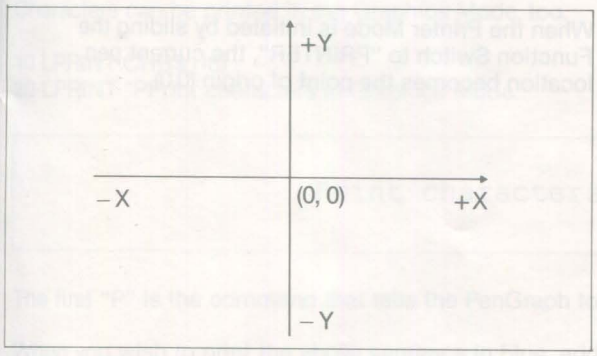
Without CR + LF, the input of DC1 will be ignored.

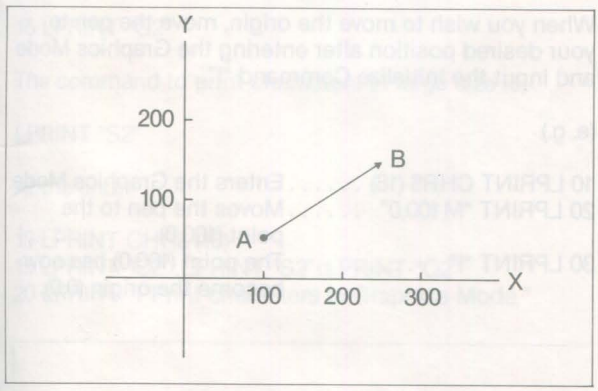
Graphics Command

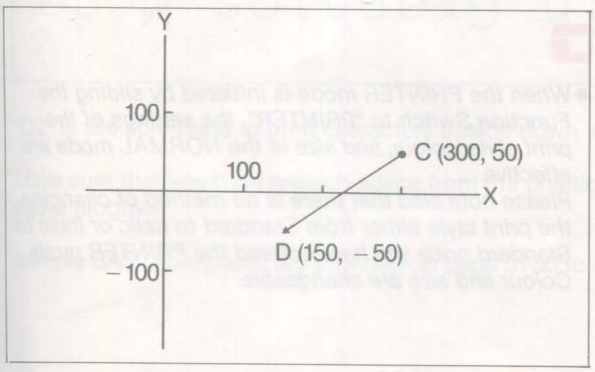
Command	Format	Function
DRAW	Dx, y $-999 < x, y < 999$	Draws a line from the present location of the pen to point (x, y).
RELATIVE DRAW	J $\triangle$x, $\triangle$y $-999 < \triangle x, \triangle y < 999$	Draws a line from the present location to the point located at the distance of ($\triangle$x, $\triangle$y).
MOVE	Mx, y $-999 < x, y < 999$	Moves, with pen-up, from the present location of the pen to point (x, y).
RELATIVE MOVE	R $\triangle$x, $\triangle$y $-999 < \triangle x, \triangle y < 999$	Moves, with pen-up, from the present location of the pen to the point located at the distance of ($\triangle$x, $\triangle$y).
HOME	H	Moves to the point of origin (0, 0) with pen-up.
INITIALIZE	I	Sets the point of origin (0, 0) to the present pen location.
PRINT	Pc1 c2 c3..	Prints the characters. c=characters This command is cancelled by CR(Carrier Return).
COLOUR	Cn n=0–3	Changes the colour to the one specified by n.
SCALE	Sn n=0–3	Changes the character size to the one specified by n.
ROTATE	Qn n=0–3	Changes the character direction to the one specified by n.

"n" in the COLOUR/SCALE/ROTATE command

n	0	1	2	3
C	Black	Red	Blue	Green
S	S size	M size	L size	M × 3
Q	A	≻	∀	≺







To Draw Pictures

Lines can be drawn by inputting the x-y coordinates of the graphics points. Each point is expressed in its absolute (x, y) location from the origin (0, 0) or its (▵ x, ▵ y) location relative to the proceeding points.

The value of "x" increases in increments of 0.2mm (0.08 in.) as the graphics point moves to the right. The value of "y" increases in increments of 0.2mm (0.08 in.) as the graphics point moves upward.

Suppose the location of the pen is now on A (100, 50) and you wish to move the pen to B (250, 150).

Input like,

LPRINT "D250, 150" in absolute coordinates or
LPRINT " J150, 100" in relative coordinates

The PenGraph draws a line from A to B.

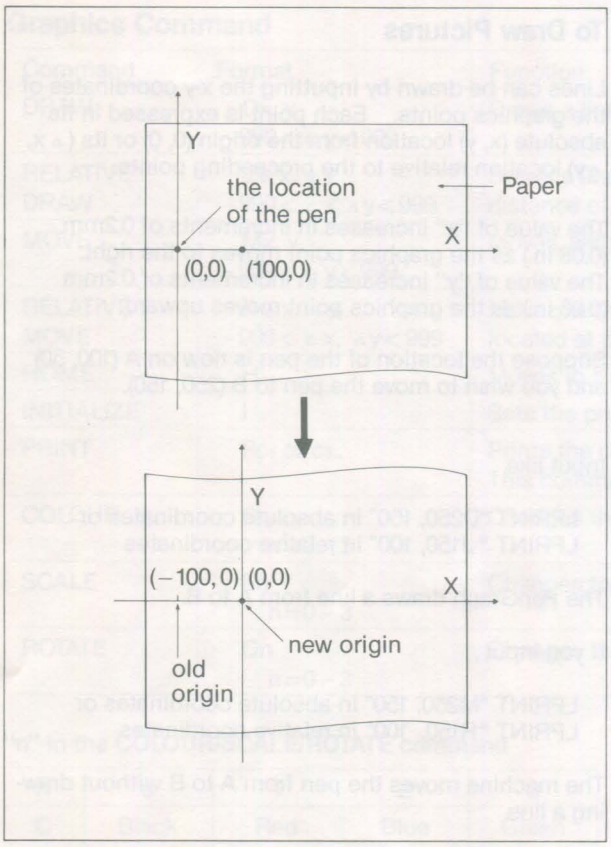
If you input,

LPRINT "M250, 150" in absolute coordinates or
LPRINT "R150, 100" in relative coordinates

The machine moves the pen from A to B without drawing a line.

Now you are on point C. The pen can be moved to D with or without drawing a line specifying the point D as follows;

LPRINT "D150, −50" . . . . Specified in the absolute coordinates.
LPRINT "J−150, −100" . . . Specified in the relative coordinates.
LPRINT "M150, −50" . . . . The pen moves without drawing a line.
LPRINT "R−150, −100" . . . The pen moves without drawing a line.



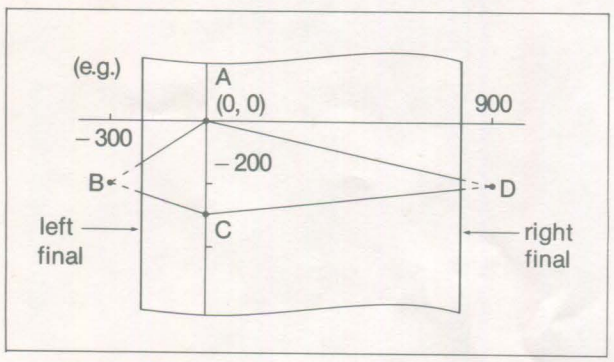
When the Printer Mode is initiated by sliding the Function Switch to "PRINTER", the current pen location becomes the point of origin (0,0).

When you wish to move the origin, move the pen to your desired position after entering the Graphics Mode and input the Initialize Command "I".

(e. g.)

10 LPRINT CHR$ (18) . . . . . Enters the Graphics Mode.
20 LPRINT "M100,0" . . . . . Moves the pen to the point (100,0).
30 LPRINT "I" . . . . . The point (100,0) has now become the origin (0,0).

- *When the PRINTER mode is initiated by sliding the Function Switch to "PRINTER", the settings of the print style, colour, and size in the NORMAL mode are effective.*
  Please note also that there is no method of changing the print style either from Standard to Italic or Italic to Standard once you have entered the PRINTER mode. Colour and size are changeable.



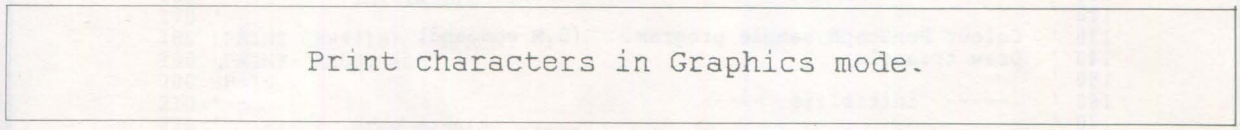
- *When the graphics point is specified beyond the left or right final position, the PenGraph draws a line as follows;*

A (0, 0)
B (−300, −200)
C (0, −300)
D (900, −200)

To Print Characters

Characters can be printed in the Graphics Mode, too.

```
10 LPRINT CHR$ (18)
20 LPRINT "PPrint characters in Graphics Mode."
```



The first "P" is the command that tells the PenGraph to print the characters.

When you wish to print the above sentence in blue, add the line,

```
15 LPRINT "C2"
```

The command to print characters in large size is,

```
LPRINT "S2"
```

At the end,

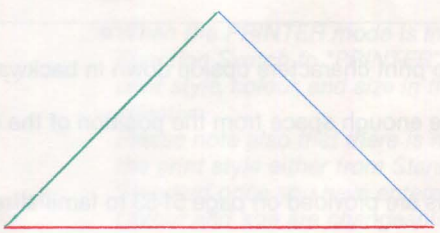
```
10 LPRINT CHR$ (18)
15 LPRINT "C2":LPRINT "S2":LPRINT "Q2"
20 LPRINT "PPrint characters in Graphics Mode."
```

"Q2" is the command to print characters upside down in backward direction.

Make sure that you have enough space from the position of the carrier to the left final position before running the above program.

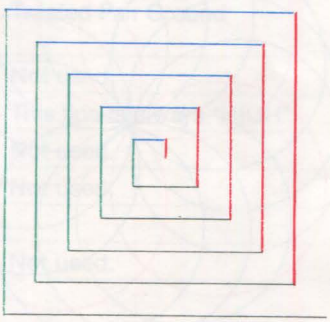
Sample BASIC programs are provided on page 51-53 to familialize you with the usage of the graphics commands.

```
100 '   /////     SAMPLE - 1     SEP.01.84    BY T.T      /////
110 '
120 '
130 '  Colour PenGraph sample program.   (D,M command)
140 '  Draw triangle
150 '
160 '    -----  initialize  -----
170 '
180 LPRINT CHR$(18) : LPRINT "I"
190 LPRINT "M400,-400" : LPRINT "I"
200 '
210 '    -----  draw triangle  -----
220 '
230 LPRINT "C1" : LPRINT "D400,0"
240 LPRINT "C2" : LPRINT "D200,200"
250 LPRINT "C3" : LPRINT "D0,0"
260 LPRINT "M-75,-150" : LPRINT "C0" :LPRINT "S2" : LPRINT "P*****  SAMPLE - 1
*****"
270 LPRINT "H" : LPRINT "M0,-999"
280 END
```



***** SAMPLE - 1 *****

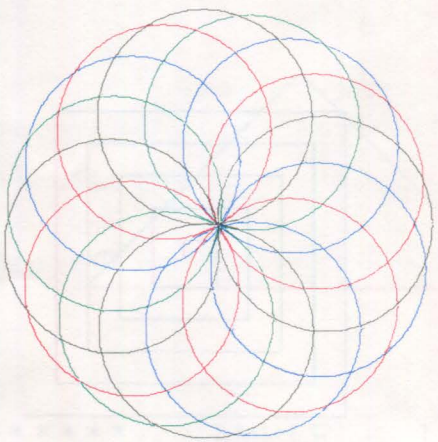
```
100 '   /////     SAMPLE - 2      SEP.01.84     BY T.T     /////
110 '
120 '
130 '  Colour PenGraph sample  program.   (J,R command)
140 '  Draw naruto
150 '
160 '    -----  initialize  -----
170 '
180 LPRINT CHR$(18) : LPRINT "I"
190 LPRINT "R400,-400"
200 SP=15
210 '
220 '    -----  draw naruto  -----
230 '
240 FOR I=1 TO 20
250   ON (I MOD 4)+1 GOSUB 340,350,360,370
260 NEXT I
270 LPRINT "H"
280 LPRINT "R100,-700" : LPRINT "S2" : LPRINT "P*****  SAMPLE -2  *****"
290 LPRINT "R0,-999"
300 END
310 '
320 '    -----  sub .  -----
330 '
340 LPRINT "C0" : LPRINT "J";SP*I;",";0   : RETURN
350 LPRINT "C1" : LPRINT "J";0;",";SP*I   : RETURN
360 LPRINT "C2" : LPRINT "J";-SP*I;",";0  : RETURN
370 LPRINT "C3" : LPRINT "J";0;",";-SP*I  : RETURN
```



***** SAMPLE -2 *****

```
100 '   /////     SAMPLE - 3    AUG.31.84   BY T.T     /////
110 '
120 '  Colour PenGraph sample program.
130 '  Draw circle
140 '
150 '    -----  initialize  -----
160 '
170 DEFSNG A-Z
180 PI=3.14159 : SP=100 : C=0 : RS=15
190 X0=400 : Y0=-400 : R0=100 :R1=100
200 '
210 '    -----  main circle  -----
220 '
230 LPRINT CHR$(18) : LPRINT "I"
240 LPRINT "M";X0;",";Y0 : LPRINT "I"
250 '
260 FOR I=0 TO 2*PI-.0001 STEP 2*PI/RS
270   X=INT(R0*COS(I)) : Y=INT(R0*SIN(I))
280   LPRINT "M";X;",";Y
290     GOSUB 400
300   IF C=3 THEN C=0 ELSE C=C+1
310   LPRINT "C";C
320 NEXT I
330 LPRINT "H"
340 LPRINT "M-150,-300":LPRINT "P*****  SAMPLE - 3  *****"
350 LPRINT "R0,-999"
360 END
370 '
380 '    -----  sub. circle  -----
390 '
400 X1=X+R0*COS(0) : Y1=Y+R0*SIN(0)
410 LPRINT "M";X1;",";Y1
420 FOR J=0 TO 2*PI+2*PI/R1 STEP 2*PI/R1
430   X1=INT(X+R0*COS(J)) : Y1=INT(Y+R0*SIN(J))
440   LPRINT "D";X1;",";Y1
450 NEXT J
460 RETURN
```

See the Note below.



***** SAMPLE - 3 *****

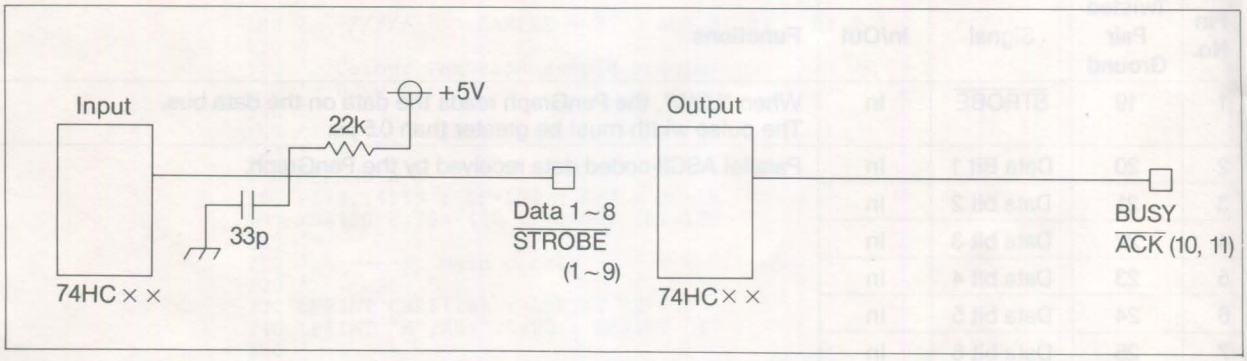
It is recommended to use the Integer Function (INT) where the floating point number may appear. The data as "1.03E-6" should be avoided.

Parallel Interface

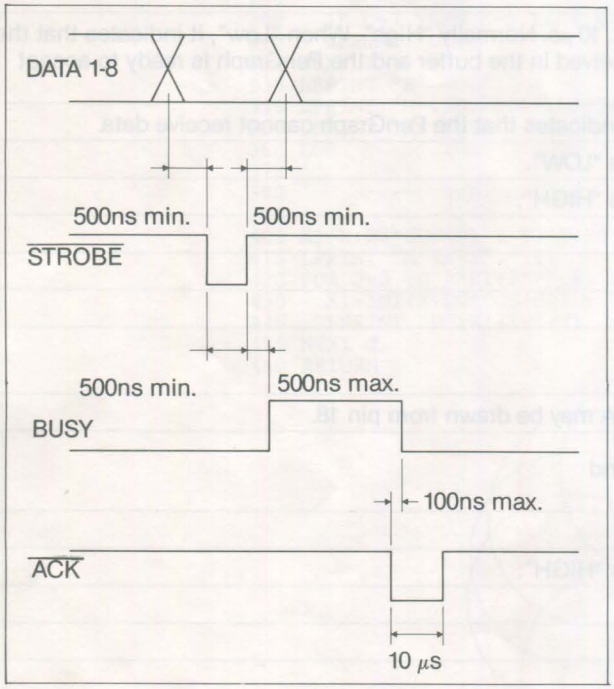
Signals and Functions

Pin No.	Twisted Pair Ground	Signal	In/Out	Functions
1	19	$\overline{\text{STROBE}}$	In	When "LOW", the PenGraph reads the data on the data bus. The pulse width must be greater than 0.5 μs.
2	20	Data Bit 1	In	Parallel ASCII-coded data received by the PenGraph.
3	21	Data bit 2	In	
4	22	Data bit 3	In	
5	23	Data bit 4	In	
6	24	Data bit 5	In	
7	25	Data bit 6	In	
8	26	Data bit 7	In	
9	27	Data bit 8	In	
10	28	$\overline{\text{ACK}}$	Out	A pulse of approx. 10 μs. Normally "High". When "Low", it indicates that the data has been received in the buffer and the PenGraph is ready to accept more data.
11	29	BUSY	Out	When "HIGH", it indicates that the PenGraph cannot receive data.
12	30	ALERT	Out	This line is always "LOW".
13		SELECT	Out	This line is always "HIGH".
14				Not used.
15				Not used.
16		GND		Signal Ground.
17		CHASSIS GND		Ground
18		+5V		No more than 5mA may be drawn from pin 18.
19 / 30				Twisted Pair Ground
31				Not used.
32		$\overline{\text{FAULT}}$	Out	This line is always "HIGH".
33				Not used.
34				Not used.
35		+5V		
36				Not used.

Input/Output Circuits



Timing Chart



CODE TABLE

All Locations Except Japan (00H-FFH)

LSD \ MSD	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SPACE	0	@	P	`	p	¢	Æ	Ä	é	Î			
1		DC1	!	1	A	Q	a	q	¥	æ	Ë	í	Ô			
2		DC2	"	2	B	R	b	r	£		Ï	ó	Û			
3			#	3	C	S	c	s	1/4		Ö	ú	â			
4			$	4	D	T	d	t	1/2		Ü	À	ê			
5			%	5	E	U	e	u	Ç		ä	È	î			
6			&	6	F	V	f	v	ß		ë	Ì	ô			
7			'	7	G	W	g	w	i		ï	Ò	û			
8			(	8	H	X	h	x	¿		ö	Ù				
9			)	9	I	Y	i	y	µ		ü	a				
A	LF		*	:	J	Z	j	z	Ñ		Á	è				
B			+	;	K	[	k	{	ñ		É	ì				
C			,	<	L	\	l	|	°		í	ò				
D	CR		—	=	M	]	m	}	§		Ó	ù				
E			.	>	N	^	n	~	a		Ú	Â				
F			/	?	O	_	o	SPACE	o		á	Ê				

Japan (00H-FFH)

LSD \ MSD	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SPACE	0	@	P	`	p	¢	Æ	SPACE	—	タ	ミ		
1		DC1	!	1	A	Q	a	q	¥	æ	。	ア	チ	ム		
2		DC2	"	2	B	R	b	r	£		「	イ	ツ	メ		
3			#	3	C	S	c	s	1/4		」	ウ	テ	モ		
4			$	4	D	T	d	t	1/2		、	エ	ト	ヤ		
5			%	5	E	U	e	u	Ç		・	オ	ナ	ユ		
6			&	6	F	V	f	v	ß		ヲ	カ	ニ	ヨ		
7			'	7	G	W	g	w	i		ァ	キ	ヌ	ラ		
8			(	8	H	X	h	x	¿		ィ	ク	ネ	リ		
9			)	9	I	Y	i	y	µ		ゥ	ケ	ノ	ル		
A	LF		*	:	J	Z	j	z	Ñ		ェ	コ	ハ	レ		
B			+	;	K	[	k	{	ñ		ォ	サ	ヒ	ロ		
C			,	<	L	\	l	|	°		ャ	シ	フ	ワ		
D	CR		—	=	M	]	m	}	§		ュ	ス	ヘ	ン		
E			.	>	N	^	n	~	a		ョ	セ	ホ	゛		
F			/	?	O	_	o	SPACE	o		ッ	ソ	マ	°		

CARE AND MAINTENANCE

Please follow the instructions below carefully so that your machine will always perform with the optimum efficiency.

1. When using the AC Adaptor, use the power of the designated voltage and frequency.
2. Under no circumstances, should you use an organic solvent like thinner to clean the outside of the machine.
3. Do not insert paper with clips or setting pins. They will damage the machine or cause it to fail.
4. If a ballpoint pen has been dropped into the machine, retrieve it up without fail.
5. Do not use the machine in an environment where electrostatic or electro-magnetic forces field exists, or in extreme temperatures.
6. Do not use the machine in dusty or humid places, or in direct sunlight.
7. For storage or carrying, always use the hard case.

IN CASE OF DIFFICULTY

The following is a quick reference table if your machine does not operate. If the problem persists, consult your nearest dealer.

PROBLEM	POSSIBLE CAUSE
The machine will not operate at all.	Make sure: — the machine is switched "ON". — the AC Adaptor is plugged in. — 5 batteries are installed with correct polarity. — the batteries are not exhausted.
Will not print when the keys are depressed or the print command is executed on the computer.	— the Function Switch (NORMAL/PRINTER) is properly set. — ballpoint pens are set. — the cable is properly connected to the PenGraph and Computer.
The print out is different in some way.	Make sure: — ballpoint pens are set correctly. — the ink of the ballpoint pen is not depleted or has not dried up. — the paper is not soiled with grease, etc. — the cable is properly connected to the PenGraph and Computer.
Graphs or pictures are not properly drawn in PRINTER Mode.	— Floating point number is not used in your program. (See Sample 3)

SPECIFICATIONS

Printing method	Ballpoint pen (rotary select)
Printing pitch/ characters per line/ printing speed	Large: 4.8 mm (0.19 in.)/40 characters per line/4 cps.max. Medium: 2.4 mm (0.09 in.)/80 characters per line/7 cps. max. Small: 1.2 mm (0.05 in.)/160 characters per line/14 cps. max.
Print style	Standard, Italic with choice of 3 sizes and automatic underline
Line spacing	2, 4, 6, 8 mm (0.08, 0.16, 0.24, 0.31 in.)
Paper width	220 mm (8.7 in.)
Print width	192 mm (7.6 in.)
Display	LCD 5 × 7 dots/ch. × 16 ch.
Keyboard	44-character keys + function keys
No. of characters	153 characters
Keybuffer	10 characters
Key entry control	2-key rollover
Pen colour	Black, Red, Green, Blue
Correction	1-line
Print direction	Horizontal (L-R), vertical top-bottom and bottom-top
Graph capacity	12 kinds with choice of 3 sizes, up to 12 data enters possible. Graph copy and non-print trace functions.
Calculation	+, −, ÷, ×
Power source	Five batteries/AC Adaptor
External dimensions	322 mm (W) × 267 mm (D) × 57 mm (H) (12.7 in.) (10.5 in.) (2.2 in.)
Weight	2.5 kg (5.5 lbs.) — with hard case + batteries
Option	Corrector Set/AC Adaptor
Interface	Parallel (Centronics compatible)

Specifications are subject to change without notice.

IMPORTANT

(for U.S.A. only)

This equipment generates and uses radio frequency energy. If not installed and used in strict accordance with the manufacturer's instructions, it may cause interference to radio and television reception. It has been print tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Sub-part J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— reorient the receiving antenna
— relocate the equipment with respect to the receiver
— move the equipment away from the receiver
— plug the equipment into a different outlet so that the equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the US Government Printing Office, Washington, DC., 20402, Stock No. 004-00000345-4.

HEADQUARTERS
SILVER SEIKO LTD.
16-6, Shinjuku 2-chome, Shinjuku-ku, Tokyo, 160 Japan
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Telex: 0-232-2056
Fax: 03-341-7487

U.S.A.
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19600 South Vermont Avenue,
Torrance, California 90502
Tel: 213-516-7008
Fax: 213-538-0109

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Eastern Regional Office
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Greenwich, Connecticut 06830
Tel: 203-869-0696

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Panama, Rep. of Panama
Tel: 64-9432/5951
Fax: 64-6749
Telex: 2546 SILV PG

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Fax: 06107-5100

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Fax: 0923-27693

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Telex: 65733 SSIHK HX
Fax: 5-8930780

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N.S.W. 2086
Tel: 02-452-2022
Telex: 75735 SREED
Fax: 02-452-1682

SILVER REED

72-5411(B)
Printed in Japan 8411/I(英)

SILVER REED

SILVER REED BALLPOINT PENS

When ordering Silver Reed Ballpoint Pens for your Colour PenGraph complete the form below.
Enclose check or money order.

ITEM NO.	DESCRIPTION	PRICE@	QUANTITY	TOTAL
72532302	1 set of 4 ballpoint pens (black)	$5.45		
72532401	1 set of 4 ballpoint pens (red)	$5.45		
72533102	1 set of 4 ballpoint pens (blue)	$5.45		
72533201	1 set of 4 ballpoint pens (green)	$5.45		
72532104	1 set of 4 ballpoint pens (black/red/blue/green)	$5.45		
72532203	1 set of 4 ballpoint pens (corrector set)	$5.95		
	SUB TOTAL			
	TAX*			
	TOTAL			

Postage and handling charges will be paid by Silver-Reed America, Inc.

*California residents add applicable sales tax.

Printed in Japan 8411/I (英) 72-5418

PLEASE COMPLETE BELOW FOR PROMPT DELIVERY

NAME: _____

ADDRESS: _____

_____

CITY, STATE, ZIP: _____

_____

SILVER-REED AMERICA, INC.
19600 South Vermont Avenue, Torrance, California 90502, U.S.A.

SILVER-REED AMERICA. INC.

COLOUR PENGRAPH

For complete protection under the warranty as printed, please fill out and mail the Warranty Protection Card. Receipt of this card establishes the date you received your new Colour PenGraph.

The Warranty Protection Card must be returned within ten (10) days from date of delivery to you.

In the space below enter the serial number and date of delivery for your record.

Serial No: _____

Date of Delivery: _____

For your protection, sign, fill out, and mail this card within ten (10) days from date of delivery. This will validate your warranty which covers a period of one (1) year for parts and ninety (90) days for service.

Date Purchased: _____ Serial No: _____

Place of Purchase: _____

City: _____ State: _____

Your Name: _____

Address: _____

City: _____ State: _____ Zip: _____

SILVER-REED AMERICA, INC.
19600 South Vermont Avenue,
Torrance, CA. 90502

Place
Stamp
Here

LIMITED WARRANTY

Silver-Reed warrants your new Colour PenGraph for a period of one (1) year from date of delivery for parts and ninety (90) days for service, with the exception of ribbons and batteries. This limited warranty does not cover damage from misuse, neglect, or accident and extends to the original owner only. Your Silver-Reed Colour PenGraph is manufactured under the most stringent controls and skilled precision available in modern manufacturing today.

To cover postage and handling when merchandise is returned under warranty for service, the sum of $5.00 should be remitted by check or money order. Proof of purchase in the form of a sales slip or proof of delivery must accompany the merchandise.

Return to:

Silver-Reed America, Inc.
19600 South Vermont Avenue,
Torrance, CA. 90502

72-5417